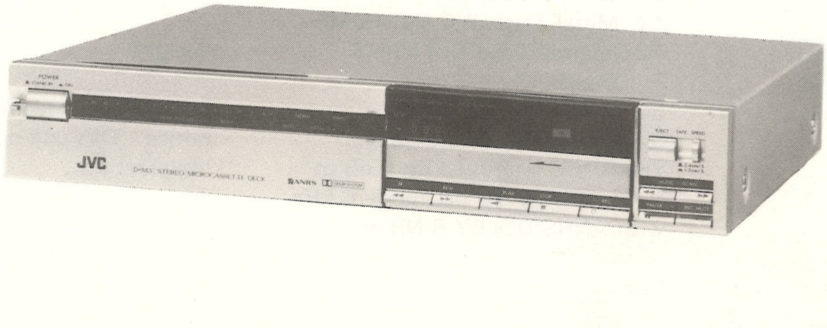
JVC

SERVICE MANUAL

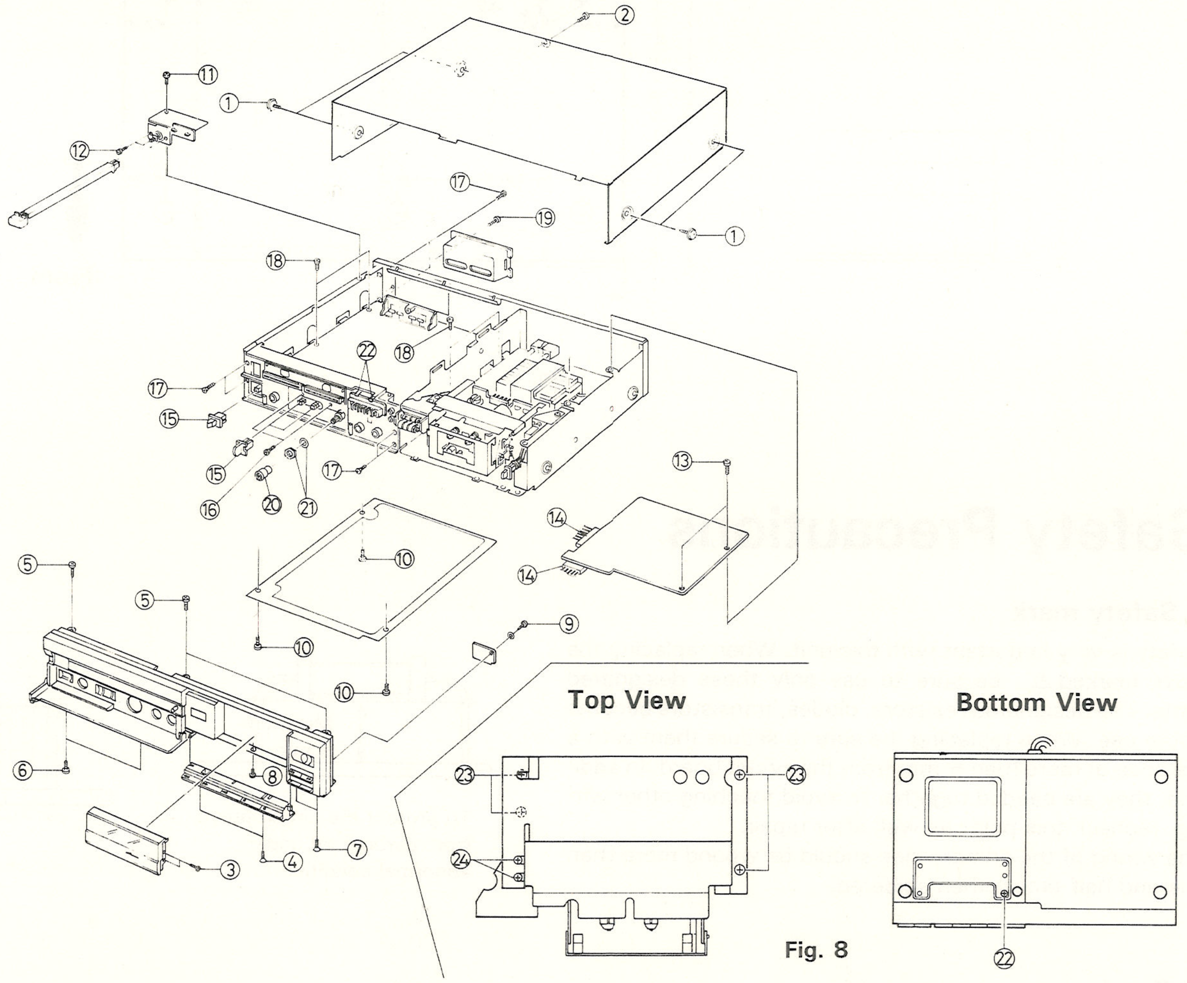
MODEL
D-M3 A/B/C/E/J/U
STEREO MICRO CASSETTE DECK



No. 4213
May, 1982

Removal of the Main Parts

Observe care in handling the parts since the parts are small in size and the distance between them are short due to a deck design aimed mainly at compactness and high performance.
(Removement should be performed in the order of steps 1,2,3.......)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Top View
Bottom View
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Fig. 8

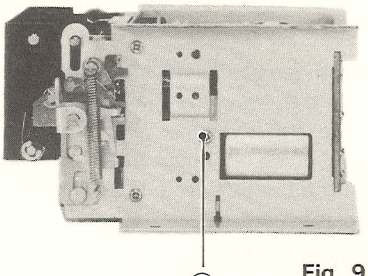

Fig. 9

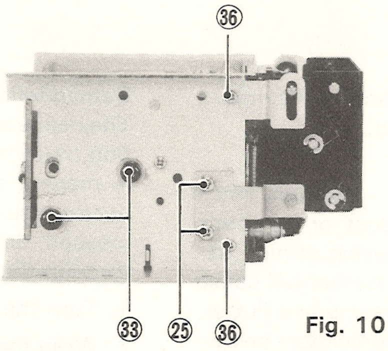

Fig. 10

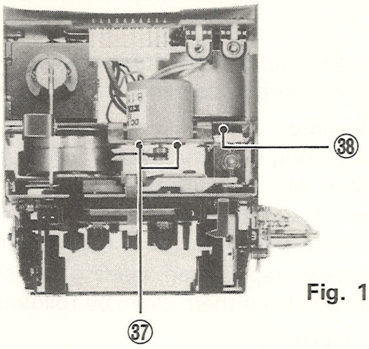

Fig. 11

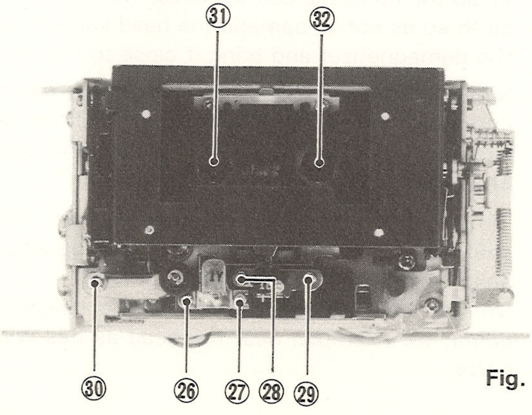

Fig. 12

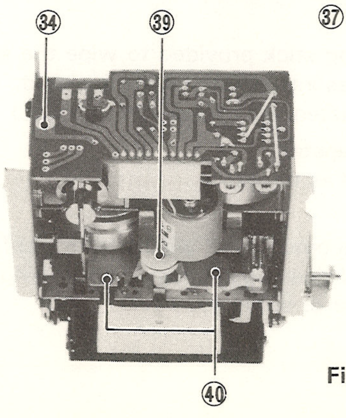

Fig. 13

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Specifications

Track system	: Micro cassette 4 track stereo
Heads	: Metaperm head for recording/ playback, 2 gap SA head for eraser.
Motors	: Electronic governed DC motor for capstan. DC motor for FF/REW.
Wow and flutter	: 0.08% (WRMS), ±0.18% (DIN 45 500)
Fast forward and Rewind time	: 110 sec with C-60 cassette
Frequency response	: (−20 dB recording) Metal tape *1; 40 Hz ~ 12,500 Hz (±3 dB) SF/Normal tape *2; 40 Hz ~ 10,000 Hz (±3 dB)
Frequency range	: (−20 dB recording) Metal tape *1; 20 Hz ~ 15,000 Hz SF/Normal tape *2; 20 Hz ~ 13,000 Hz *1 Metal Tape JVC MC-60ME *2 Normal Tape OLYMPUS OA-B111
S/N ratio	: 52 dB (S = 1 kHz, K3: 3% N = A-weighted, metal tape) The S/N is improved by 5 dB at 1 kHz and by 10 dB above 5 kHz with ANRS/DOLBY B NR on.
Harmonic distrtion	: 1.2% (K3: metal tape 1 kHz 0 dB)
Input terminals	
Mic jack x 2	: Max sensitivity : 0.3 mV (−70 dBV) Matching impedance: 600 Ω ~ 10 kΩ
Input jack x 2	: Min. input level: 80 mV Input impedance: 100 kΩ
Output terminals	
Output jack x 2	: Output level : 0.3 V Output impedance : 5 kΩ
Power requirement	: AC 240/220/120 V 50/60 Hz (D-M3A/B/C/E/J) AC 240/220/120/100 V 50/60 Hz (D-M3U)
Power consumption	: 19 W/AC at power switch on 2W/AC at power switch STANDBY
Dimensions	: 340 mm (13-3/8″) W 59 mm (2-5/16″) H 264 mm (10-5/8″) D
Weight	: 3.5 kg (7.7 lbs)

Design and specifications are subject to change without notice. This unit does not have a DIN connector for recording/playback.

Features

- Only 59 mm high, the D-M3 is a slim-line model for micro cassette deck (2 motors mechanism)
- Music Scan mechanism of one touch switches (Independent Buttons on both side)
- Bulit-in ANRS and DOLBY B Noise Reduction.
  ''Dobly'' and the double-D symbol are trademarkes of Dobly Laboratoreis Licensing Corporation.
- METAPERM head for recording/playback.
- 2 color 7 points/ch LED digital meter.
- Rec muting system.
- Compact style of complete matching for COMPO34EX. (JVC stereo component unit).

Controls and Connections

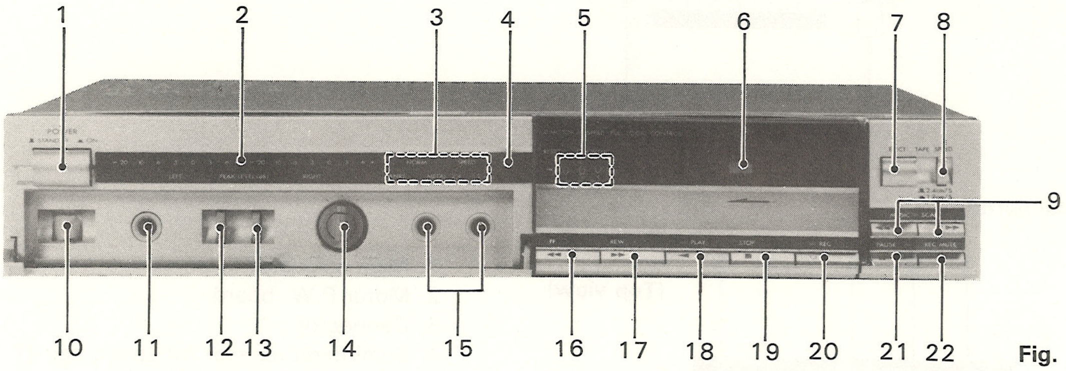
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Fig. 1

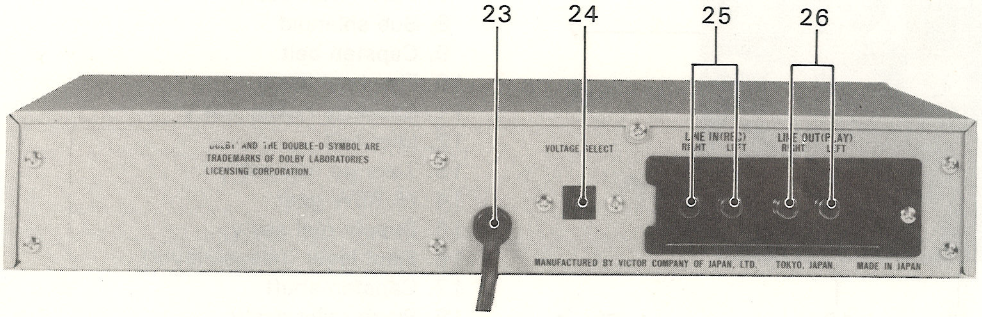

23
24
25
26
DOLBY AND THE DOUBLE-D SYMBOL ARE TRADEMARKS OF DOLBY LABORATORIES LICENSING CORPORATION.
VOLTAGE SELECT
LINE IN(REC) RIGHT LEFT
LINE OUT(PLAY) RIGHT LEFT
MANUFACTURED BY VICTOR COMPANY OF JAPAN, LTD. TOKYO, JAPAN. MADE IN JAPAN

Fig. 2

1. POWER switch
2. PEAK LEVEL indicator
3. Indicators [ANRS, NORM, METAL, SPEED 2.4—1.2]
4. Counter reset buttom [RESET]
5. Tape counter [COUNTER]
6. Cassette holder
7. EJECT buttom
8. SPEED select switch
9. MUSIC SCAN buttom [◀◀, ▶▶]
10. TIMER switch
11. Headphone jack [PHONES]
12. Noise reduction system switch [NR SYSTEM]
13. TAPE SELECT switch
14. REC LEVEL control (L=Left channel
    R=Right channel)
15. MICROPHONE jacks (L=Left channel
    R=Right channel)
16. ◀◀ FF button
17. ▶▶ REW button
18. ▶ PLAY button
19. ■ STOP button
20. ○ REC button
21. ❚❚ PAUSE button
22. REC MUTE button
23. Power cord
24. VOLTAGE SELECT switch
25. LINE IN (REC) terminals
26. LINE OUT (PLAY) terminals

Main Parts Location

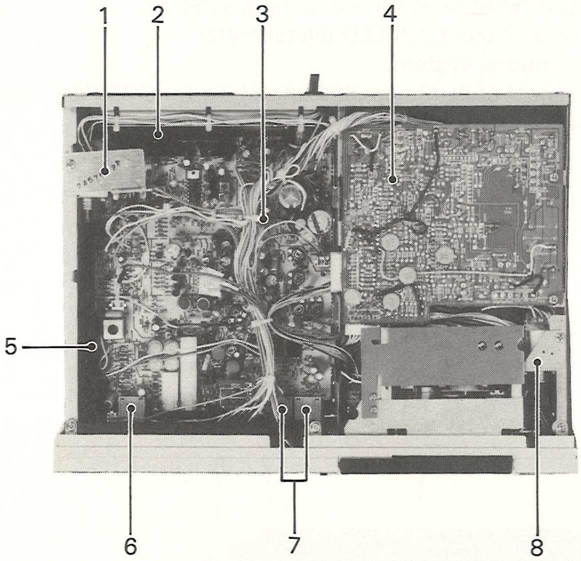


Fig. 3

1. Heat shink for regulator (Power SW P.W.B. is under)
2. Pin jack ass'y
3. Main amplifier P.W. board
4. Mecha. control P.W. board (Power transformer is under)
5. Remote bar (for power switch)
6. Headphone jack
7. Microphone jacks
8. Speed select switch

(Mechanical parts)

(Top view)

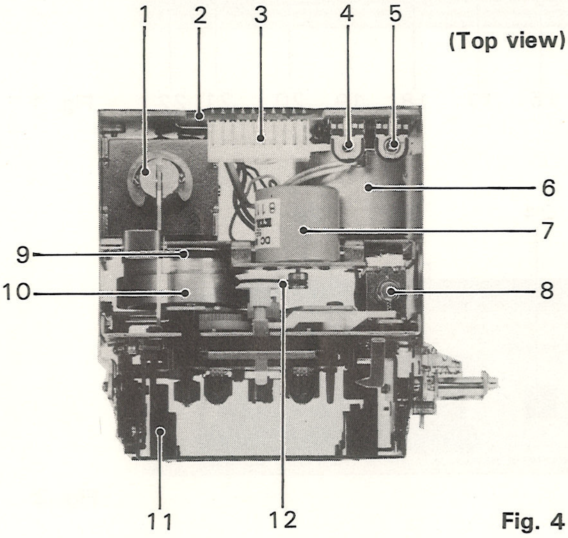


Fig. 4

(Front top view)

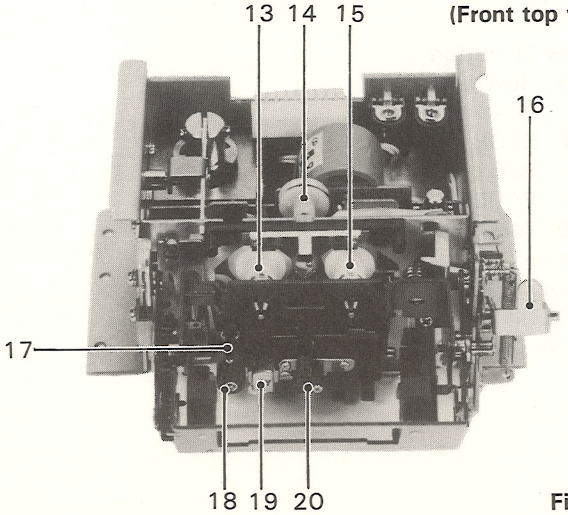


Fig. 5

1. Main solenoid
2. Motor P.W. board
3. Connector
4. Semi-fixed resistor for speed adj. (1.2 cm/s)
5. Semi-fixed resistor for speed adj. (2.4 cm/s)
6. Capstan motor ass'y
7. Reel motor ass'y
8. Sub solenoid
9. Capstan belt
10. Flywheel ass'y
11. Cassette holder ass'y
12. Idler belt
13. Take up reel ass'y
14. FF/REW gear
15. Supply reel ass'y
16. Eject lever (release lever)
17. Capstan shaft
18. Pinch roller ass'y
19. REC/PB head
20. Erase head

Dimensions

Unit; mm

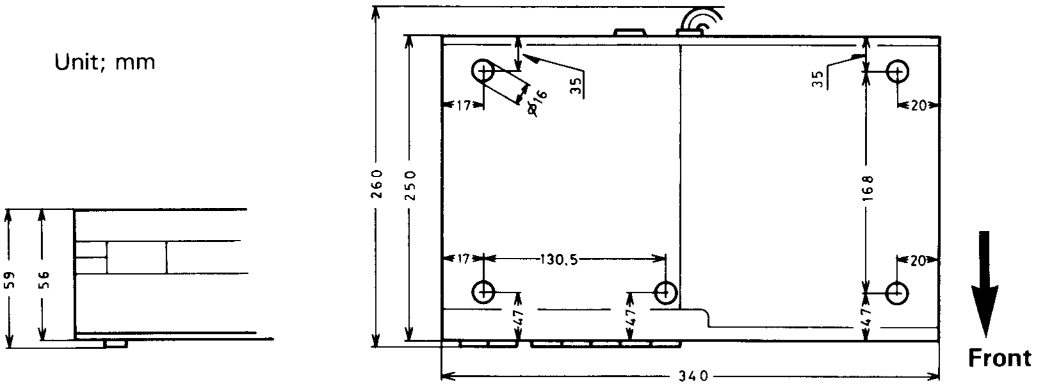
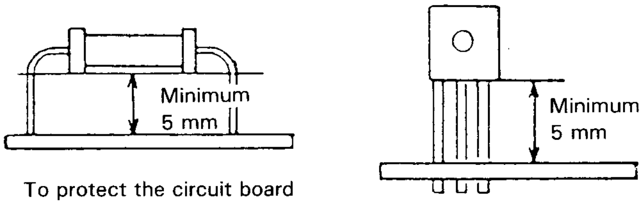


Fig. 6

Safety Precautions

⚠ Safety mark

Safety is very important with this unit. When replacing the parts marked ⚠ , be sure to use only those designated parts. The designated resistors, diodes, transistors become hot in use. When replacing, be sure to secure them with a distance of more than 5 mm from the circuit board. In addition, they are banded together to avoid touching other wiring, recheck this point as well after repair.
The wiring of the primary side should be wound more than one and half times, then soldered.



To protect the circuit board from carbonized under abnormal condition.

Fig. 7

Maintenance

To get long, trouble-free service, maintenance is important. Do not forget cleaning and demagnetizing.

Cleaning

After long use, the heads and tape part — capstan, pinch roller, etc. — will become dirty with dust or magnetic particles. Dirty heads cause imperfect erasing or high frequency drop-off. A dirty capstan and pinch roller will cause unstable tape speed, leading to increased wow and flutter. Always keep them clean by following the procedure below.

1. Heads

Use the head cleaning stick provided to wipe the surface where the tape comes into contact with the head.
(It is effective to moisten the cotton with alcohol.)

2. Pinch roller and capstan

Do the same method as heads.

3. Cabinet

When the cabinet becomes dirty, wipe it with a soft cloth soaked with a neutral cleaning solution of a polishing cloth.
* Do not use thinner or benzine.

Demagnetizing

The heads are made from a material resistant to magnetization, but after long use they become magnetized.
A magnet brought into their vicinity can magnetize the heads, causing excess noise. If noise seems to have increased, demagnetize the heads with a head demagnetizer through the following procedure.

1. Turn the POWER switch OFF.
2. Wrap the tip of the demagnetizer with vinyl tape or soft cloth so as not to damage the head surface. Switch on the demagnetizer and bring it close to the head.
3. Move the tip of the demagnetizer slowly first to the left and right, then up and down in front of the head.
   Gradually move it away from the head and switch it off at a distance of more than 30 cm. (12″)
4. The erase head need not be demagnetized. The capstan shaft and tape guide should be demagnetized in the same way as the record/playback head.

* Do not bring a magnetized metallic object (a screwdriver, for example) near the head as this will increase noise.

Removal of the Main Parts

Observe care in handling the parts since the parts are small in size and the distance between them are short due to a deck design aimed mainly at compactness and high performance.
(Removement should be performed in the order of steps 1,2,3.......)

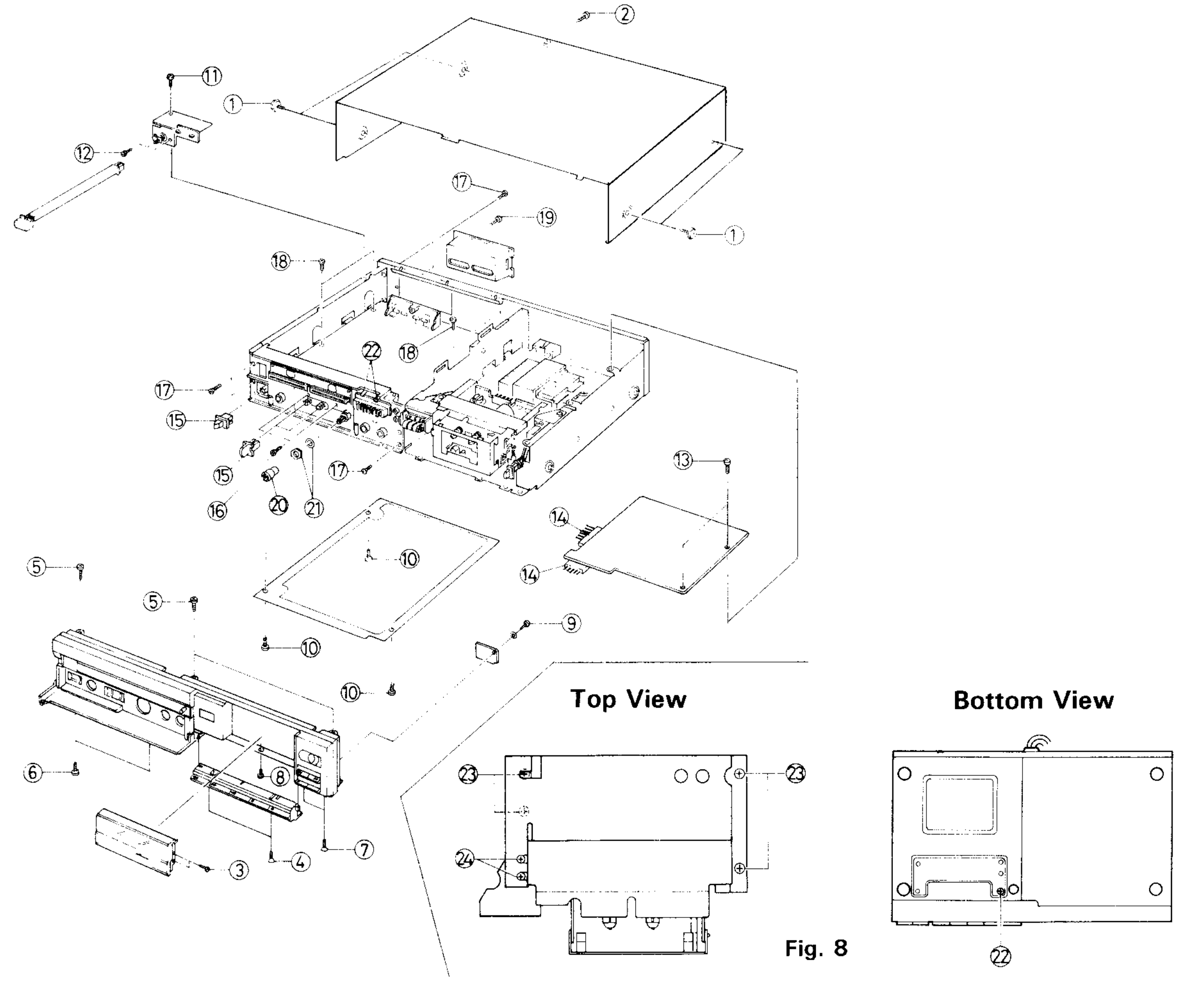

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Fig. 8

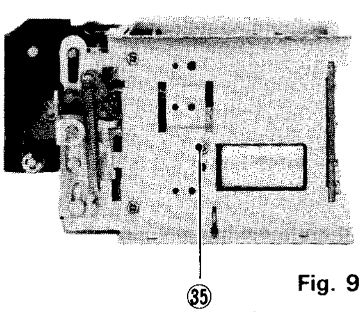


Fig. 9

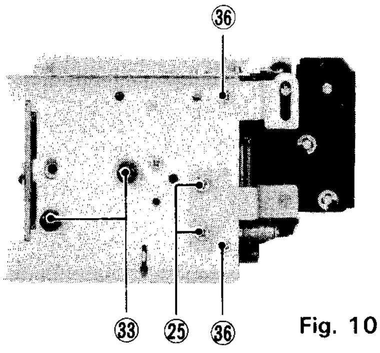


Fig. 10

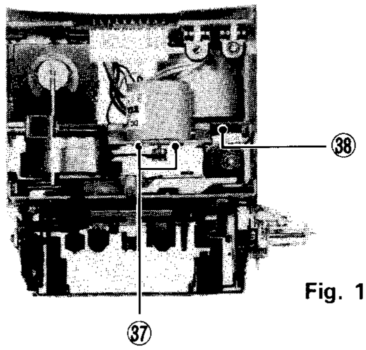


Fig. 11

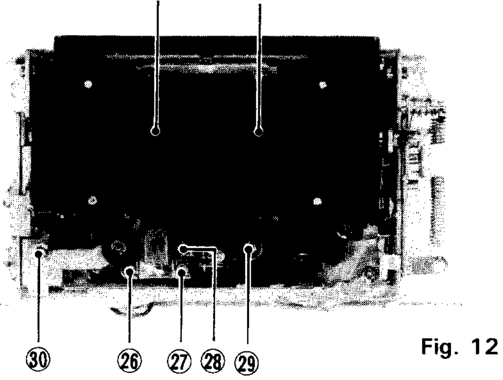


Fig. 12

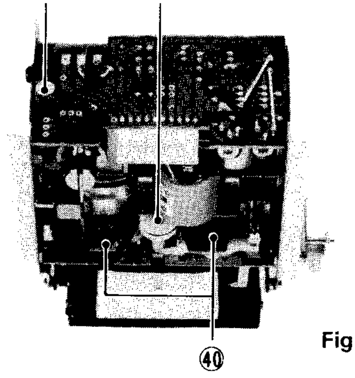


Fig. 13

A. Enclosure assembly parts (Fig. 8)

1. Top cover
   Remove 5 screws fastening the top cover.
   (4 screws ① (VKZ3001-002) on both sides and a screw ② (SDST3006R) on rear side.)
2. Cassette door
   Push the eject button to open the cassette door.
   Remove 2 screws ③ (LDSP2005R) fastening the cassette door on right side.
3. Mecha. operation button ass'y
   1) Remove 2 screws (SSSP2606Z) ④ fastening the front panel on under side.
   2) Pull off its button ass'y to under side, removing the both sides grooves.
4. Front panel assembly
   1) Remove 3 screws ⑤ (SBSF3008Z) on upper side.
   2) Remove 2 screws ⑥ (SDST3006Z) on left under side.
   3) Remove 2 screws ⑦ (SSSP2606Z) on right under side.
   4)Remove a screw ⑧ (SDST2006Z) on center under side.
   5) Pull off the front panel ass'y to front side. (with music scan SW P.W.B. and its wires)
   6) Remove a screw ⑨ (SDST3006Z) fastening the music scan SW P.W. board.
5. Bottom cover
   Remove 3 screws ⑩ (SDST3006Z)

B. Electrical parts (Fig. 8)

1. Power switch (with P.W. board)
   1) Remove the remote bar.
   2) Remove a screw ⑪ (SDST3006Z) fastening the switch bracket.
   3) Remove 2 screws ⑫ (LPSP2606Z) fastening the power switch.
2. Mecha. control P.W. board ass'y
   1) Remove 2 screws ⑬ (SDST3006Z)
   2) Pull off its P.W. Board to right side.
   3) Disconnect 2 connector ⑭
3. Main Amp. P.W. board ass'y
   1) Remove knobs ⑮ (timer standby, and select switches) to forward.
   2) Remove 2 screws ⑯ (SSSP3006Z) fastening the select switch.
   3) Remove 6 screws ⑰ fastening the bracket.
      SSSP3006Z (front left side) – 2 p.c.s.
      SDST3008Z (front right side) – 2 p.c.s.
      SDST3008RS (rear side) – 2 p.c.s.
   4) Remove 4 screws ⑱ (SDST3008Z) fastening the main Amp. P.W. board.
   5) Remove a screw ⑲ (SDST3006R) fastening the jack escutcheon.
   6) Pull off the main amp. P.W.B. to rear side.
4. Recording level control P.W. board.
   1) Remove the control knob ⑳
   2) Remove a washer and a nut ㉑ holding the V.R shaft.
5. Indicator P.W. board
   Remove 2 pawls on upper side of P.W. board.

C. Mechanical assembly (Fig. 8)

1) Remove a screw ㉒ (SDST2604C) on bottom side.
2) Remove a mecha. control P.W. board.
3) Remove 4 screws ㉓ (SDST2604Z) fastening the side bracket of mecha. assembly.

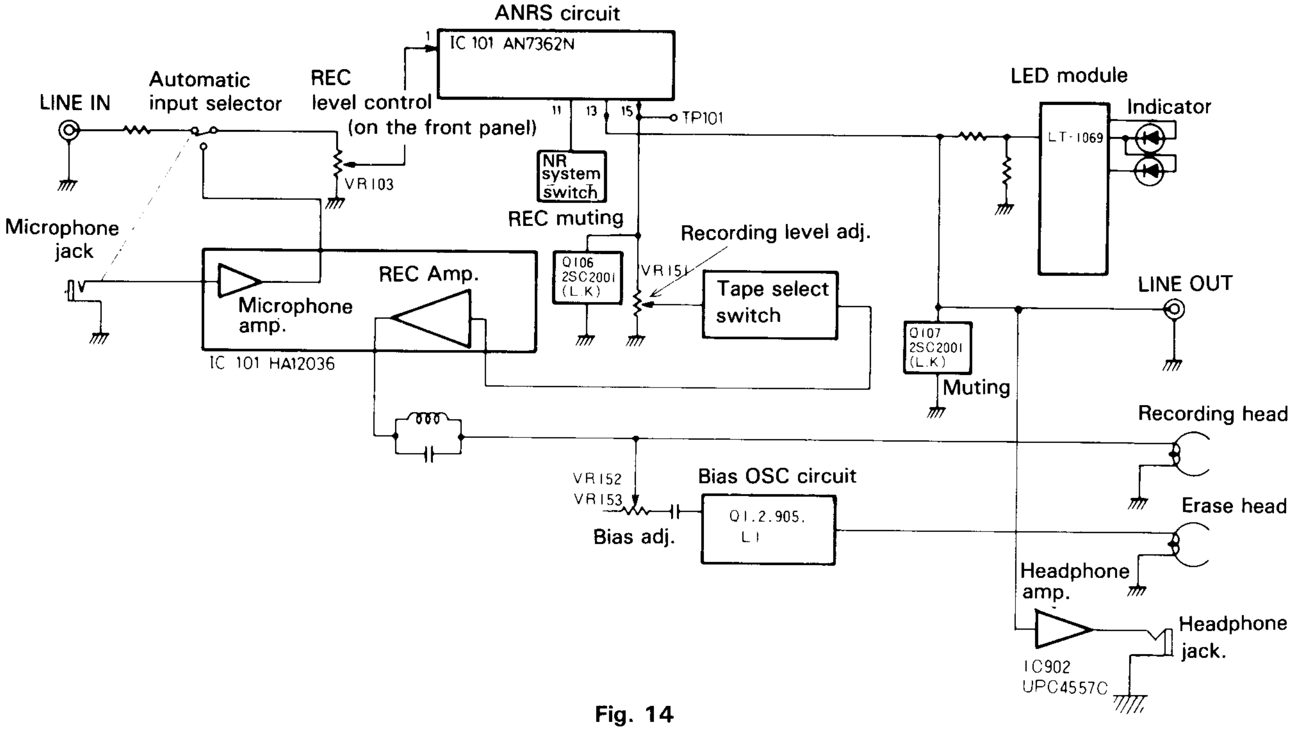
D. Mechanical parts

Remove 2 screws ㉔ (LPSP2606Z) fastening the shield plate. (these screws fasten with the bracket)

1. Cassette holder
   Remove 2 screws ㉕ on left side (Fig. 10).
2. Rec/PB head
   Remove 2 screws ㉖ ㉗ (Fig. 12).
3. Erase head
   Remove 2 screws ㉘ ㉙ (Fig. 12).
4. Pinch roller ass'y
   Remove an E ring ㉚ (Fig. 12).
5. Take up reel ass'y
   Remove a washer ㉛ (Fig. 12).
6. Supply reel ass'y
   Remove a washer ㉜ (Fig. 12).
7. Main solenoid
   Remove 2 screws ㉝ on left side (Fig. 10).
8. Motor P.W. board
   1) Remove a wire connector.
   2) Remove a screw ㉞ (Fig. 13)
9. Reel motor ass'y
   1) Remove a screw ㉟ (Fig. 9) and 2 screws ㊱ (Fig. 10), to open the mechanical assembly. (Remove with the motor belt.)
   2) Remove 2 screws ㊲ (Fig. 11).
10. Capstan motor ass'y
    1) Remove a screw ㉟ (Fig. 9) and 2 screws ㊱ (Fig. 10).
    2) Remove a screw ㊳ (Fig. 11).
11. REW/FF gear
    1)Remove a screw ㉟ (Fig. 9) and 2 screws ㊱ (Fig. 10).
    2) Remove a washer ㊴ (Fig. 13).
12. Sub chassis ass'y
    1) Remove a screw ㉟ (Fig. 9) and 2 screws ㊱ (Fig. 10).
    2) Remove 2 screws ㊵ (Fig. 13).

Block Diagram

Recording System


ANRS circuit
IC 101 AN7362N
1
11
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TP101
Automatic input selector
REC level control (on the front panel)
LINE IN
VR103
NR system switch
REC muting
Q106 2SC2001 (L.K)
VR151
Recording level adj.
Tape select switch
Microphone jack
REC Amp.
Microphone amp.
IC 101 HA12036
LED module
LT-1069
Indicator
LINE OUT
Q107 2SC2001 (L.K)
Muting
Recording head
VR152
VR153
Bias adj.
Bias OSC circuit
Q1.2.905.
L1
Erase head
Headphone amp.
IC902
UPC4557C
Headphone jack.

Fig. 14

Playback System

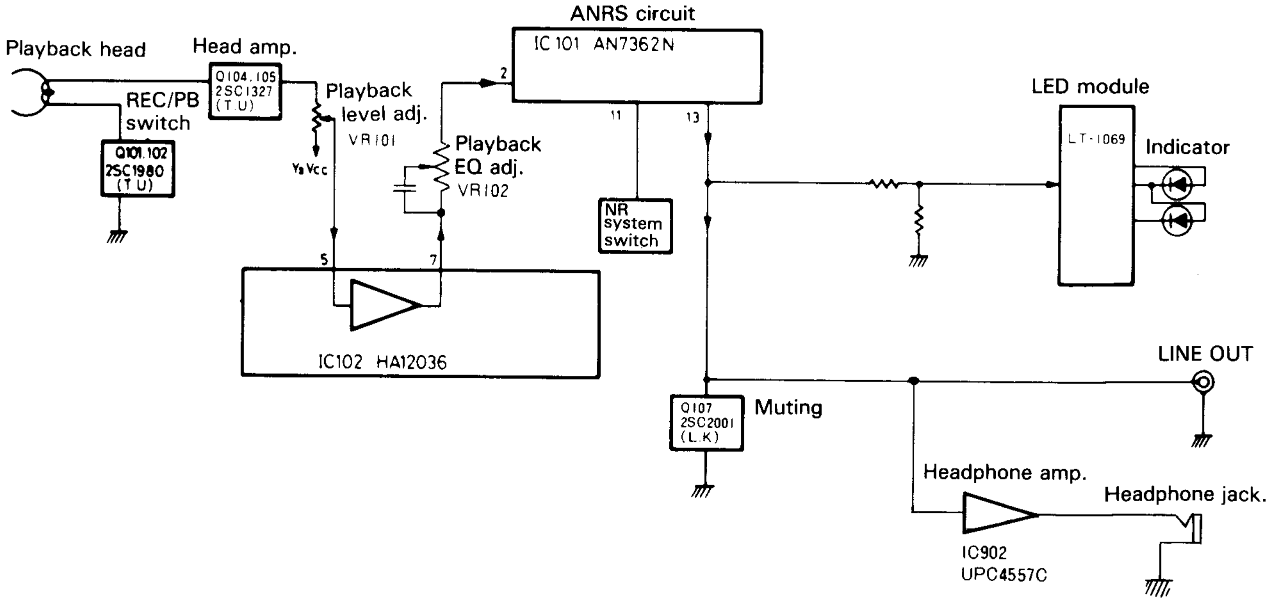

ANRS circuit
IC 101 AN7362N
2
11
13
Playback head
Head amp.
Q104.105 2SC1327 (T.U)
REC/PB switch
Q101.102 2SC1980 (T.U)
Playback level adj.
VR101
½Vcc
Playback EQ adj.
VR102
5
7
IC102 HA12036
NR system switch
LED module
LT-1069
Indicator
LINE OUT
Q107 2SC2001 (L.K)
Muting
Headphone amp.
IC902
UPC4557C
Headphone jack.

Fig. 15

Main Adjustments

[I] Equipment and measuring instruments used for adjustment

1. Electrical adjustment

1) Electronic voltmeter
2) Audio frequency oscillator
   (range: 50—20 kHz and output 0 dB with impedance 600 Ω)
3) Attenuator
4) Reference tapes for playback (JVC test tape)
   OA-A231 (for head azimuth adj.)
   2.4 cm/s OA-W212 } (for motor speed, wow
   1.2 cm/s OA-W221 } flutter adj.)
   OA-L212 (for reference level 1 kHz)
   TMT6438 (for music scanning)
   TMT6439 (for music scanning)
5) Standard tapes for REC/PB
   Normal OA-B111 } or equivalent
   Metal MC-60 }
6) Resistor
   600Ω (for attenuator matching)
7) Band pass filter.

2. Mechanical adjustment.

1) Torque testing cassettes
   TW-1112A (for playback torque)
   TW-1231A (for FF and REW torque)
2) Tape scanning cassette
   MC-60

[II] Adjustment and repaire of the mechanism

(Adjust the mechanism or confirm that it is in normal operating condition prior to the adjustment of the electrical circuit.)

- Tape-to-head contact adjustment.
  1) Turn the adjusting screw for aligning the erase head until it stops. Then, turn the screw in the reverse direction by 1.5 revoltion.
  2) Check the tape-to-head contact using a MC-60 tape having pads.
  3) Check it again with a metal tape.
     Checking method:
     Record a 400 Hz or 1 kHz signal with OVU +20 dB. Erase the recording. Checking if the erasing is satisfactorily performed.
  4) After adjustment, apply screw bond on the adjusting screw to prevent its loosening.

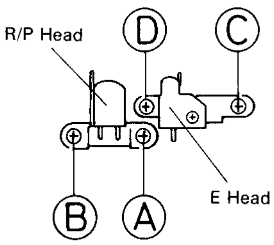


Fig. 16

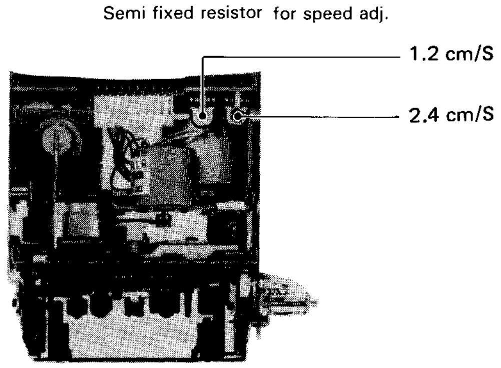
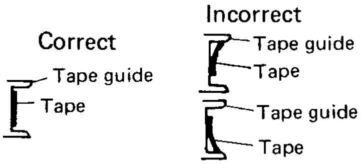


Fig. 17

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting record/playback head azimuth	1. Connect an electronic voltmeter to the LINE OUT terminals. 2. Playback the OA-A231 test tape. 3. Adjust the head angle with the screw Ⓐ until the reading of the electronic voltmeter becomes maximum for both channels. 4. After adjusting, set the screw with screw bond.	Screw Ⓐ	Maximum	If the head is worn, disconnected or exceedingly magnetized so as not to provide the necessary characteristics, replace it with a new one. After replacement, the head position adjustment as well as the playback level adjustment, the bias current adjustment and the recording level adjustment are all necessary. If the output difference between the left and right channels exceeds 3—4 dB, the head is defective. Replace it with a new one.

Item	Adjustment	Adjusting point	Standard value	Remarks
Adjusting erase head height	Turn the screw Ⓓ for aligning the erase head until it stops. Then, turn the screw in the reverse direction by 1.5 revolution. Employ a special cassette (MC-60) from which parts of the casing, where the erase head, record/playback head and capstan engage, has been cut away. Perform tape transport with the cassette tape. Adjust the screw Ⓒ until the tape runs in the center of the erase head tape guide.	Screw Ⓒ Ⓓ		Be sure to perform this adjustment after replacing the erase head.  Correct Tape guide Tape Incorrect Tape guide Tape Tape guide Tape
Adjusting motor speed	Connect a speed meter (an electronic counter) to the LINE OUT terminals. Playback the OA-W212 (2.4 cm/s) or OA-W221 (1.2 cm/s) test tape. Adjust the semi-fixed resistor in the motor until the reading of the speed meter is 3000 Hz.	Semi-fixed resistor in the motor	3000 Hz	If the speed meter functions as a wow and flutter meter, also, connect the deck to the INPUT terminals of the meter.
Checking playback torque	Employ a torque testing cassette tape (TW-112A) for the checking.		7 ~ 15 gr/cm	If the standard torque is not obtained, replace the take-up disc assembly.
Checking fast forward torque	Measure the torque in the fast forward mode in the same manner as in the above (TW-1231A).		More than 40 gr/cm	If the standard torque is not obtained, perform the following. 1. Clean the capstan belt, the motor pulley, the take-up reel disc circumference, the flywheel circumference, etc. 2. Replace the belt.
Checking rewind Torque	Measure the torque in the rewind mode in the same manner as in the above.		More than 40 gr/cm	
Checking wow and flutter	Connect a wow and flutter meter to LINE OUT terminals. Playback the OA-W212 or OA-W221 test tape. Check to see if the reading of the meter is within 0.12% (WRMS) – 2.4 cm/s or 0.40% (WRMS) – 1.2 cm/s			
Checking music scan	1. After pushing CUE or REV button, playback the TMT-6438 test tape at music scan mode. Check to do music scanning. 2. Using the TMT-6439, the music scan mechanism does not function.			

[III] Electrical adjustment location

Main Amp. P.W. Board (parts ass'y side view)

(Turning in the direction the arrow increases the levels)

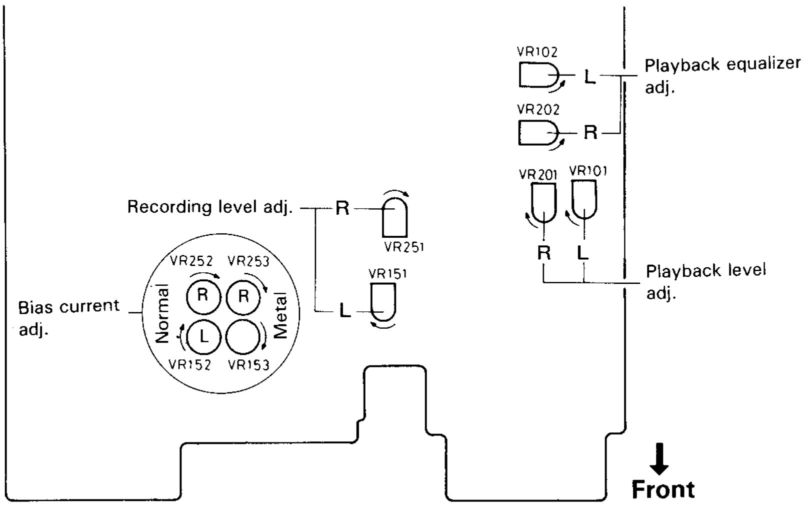
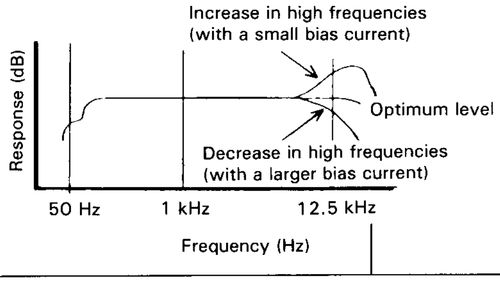


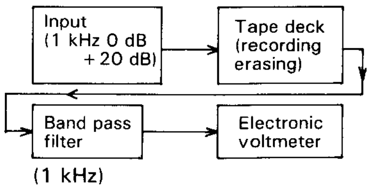
Fig. 18

[IV] Electrical circuit adjustment procedure

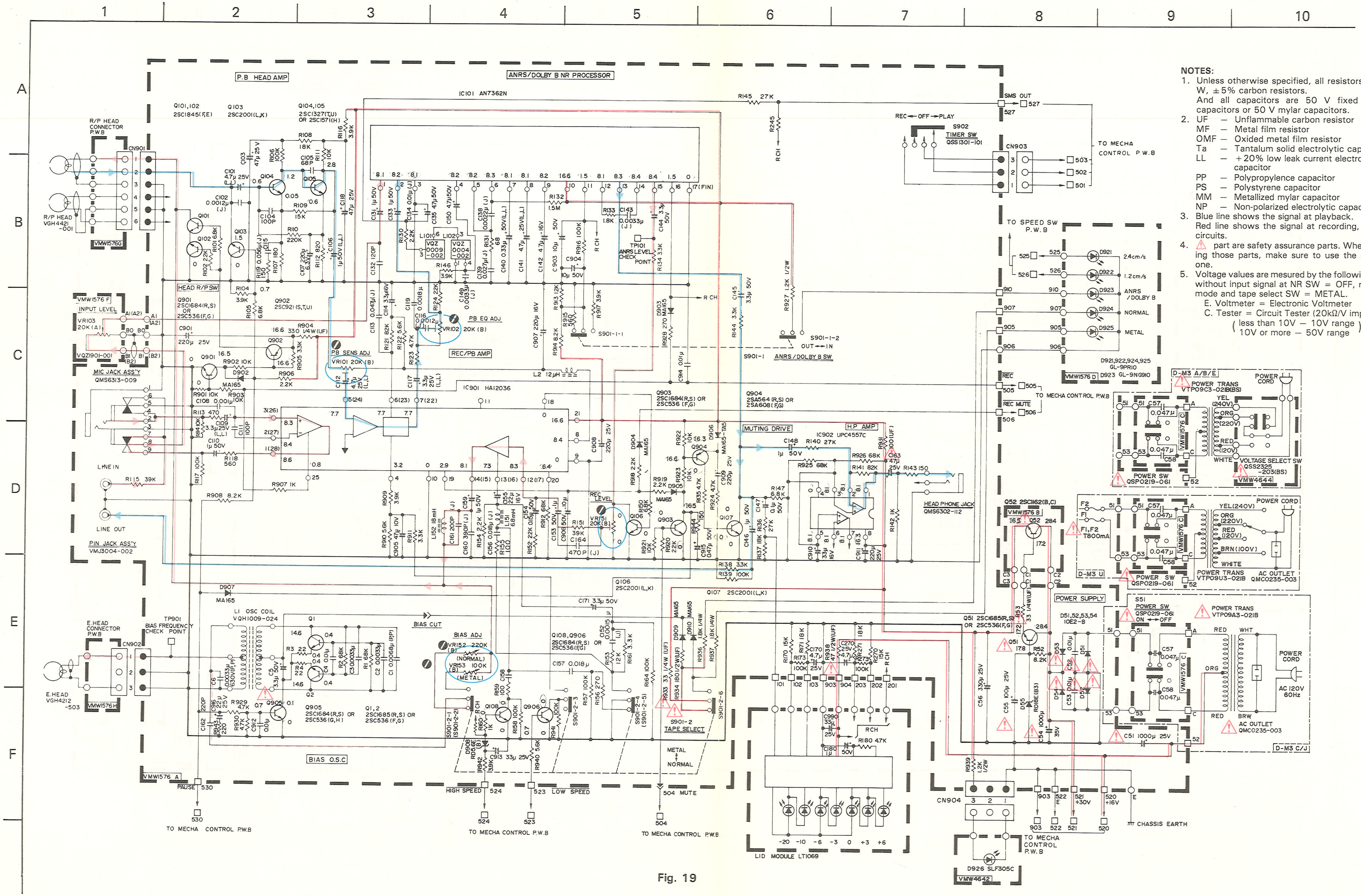
In the steps maked by an asterisk (*), adjustment should be performed, however, only checking is sufficient with steps other than those.

Adjustment should be performed in the order of steps 1, 2, 3,... Perform this adjustment with the NR switch set to OFF.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
1*	Adjusting playback level	1. Play back the OA-L212 Reference tape (1 kHz) with the tape select switch set to the SF/NORM position. 2. Adjust VR101 and VR201 until the LINE OUT becomes about −8 dBs. (When using the OA-L211 reference tape, LINE OUT levels become −13 dBs.)	VR101 201	−8 dBs (0.3 V)	This adjustment becomes necessary when a change in playback level results (for example, due to head replacement).
2*	Checking record/ playback frequency response	1. (Metal tape −2.4 cm/s) Record 1 kHz, 50 Hz and 12.5 kHz signals at an input level of 0 dB to −20 dB. Play back the tape. Check to see that the 50 Hz and 12.5 kHz signal output deviations fall within the standard range, using the 1 kHz signal output as a reference. 2. (Normal tape − 2.4 cm/s) Record 1 kHz, 50 Hz and 8 kHz signals in the same manner as in the above. Playback the tape. Check the same manner as in the above.  	VR153 253 (Metal) VR152 252 (Normal)	Reference frequency; 1 kHz 0±3 dB at 50 Hz 0±4 dB at 12.5 kHz (Metal) 0±4 dB at 8 kHz (Normal)	This checking should be performed for normal tape and for both right and left channels. 1. Bias current adjustment for a micro cassette deck should generally be performed referring to the record/ playback frequency response. This is because the frequency response of a cassette deck depends more greatly upon the bias current than does that of an open reel deck. The current measuring method described left is an alternative one. 2. If the bias current is not properly adjusted, the record and playback characteristics become as shown left.

Step	Item	Adjustment	Adjusting point	Standard value	Remarks
3	Adjusting recording level	1. Apply a 1 kHz, approx. −10 dB signal to the LINE IN terminals. Adjust the recording level controls until the signal is available at −8 dBs at the LINE OUT terminals. 2. After checking to see if the Peak level indicator become 0, record the signal applied to both left and right channels using normal tape. 3. Play back the recording part. Perform the recording signal adjustment with VR151 and VR251 so that the peak level indicator become 0.	VR151 251	0 VU	The level difference between left and right channels for SF/NORMAL tape and metal tape should be less than 1 dB. Perform the adjustment using a normal tape, level difference between recording and playback for metal tape, should be less than 1.5 dB, and that between left and right channels should also be less than 1 dB.
4	Checking record/ playback signal distortion	1. Record a 1 kHz, −8 dBs signal to LINE IN terminals and perform recording with the peak level indicator become 0. 2. Play back the recorded part. Check the output with a distortion meter to see if the value conforms to the standard value.		SF/NORM tape; Less than 3% Metal tape: Less than 2%	Be sure to perform this adjustment following bias current and recording level adjustments.
5	Checking signal to noise ratio in recording/playback	1. Record a 1 kHz, 0 dB signal. Stop the input by disconnecting from the terminal to perform nonsignal recording. 2. Play back the recorded part. Measure the 0 dB recording output and the nonsignal recording output for comparison using an electronic voltmeter. Check to see if the value conforms to the standard value.		SF/NORM, tape. More than 52 dB	
6	Checking erasing coefficient	1. Apply a 1 kHz signal to the LINE IN terminals. Adjust the recording level controls until the peak level indicator become 0 dB. 2. Perform recording with the signal enhanced by 10 dB. 3. Erase a part of the recording. 4. Measure the output difference between the erased part and nonerased part to compare with an electronic voltmeter.		More than 60 dB	For the measuring, connect a band pass filter between the deck and the electronic voltmeter.  Input (1 kHz 0 dB +20 dB) Tape deck (recording erasing) Band pass filter Electronic voltmeter (1 kHz)
7	Check Auto stop	Hold less than $1^{+0}_{-0.5}$ mm gap to the magnet from the hall IC.			

Standard Schematic Diagram of D-M3 (Main Amplifier Circuit)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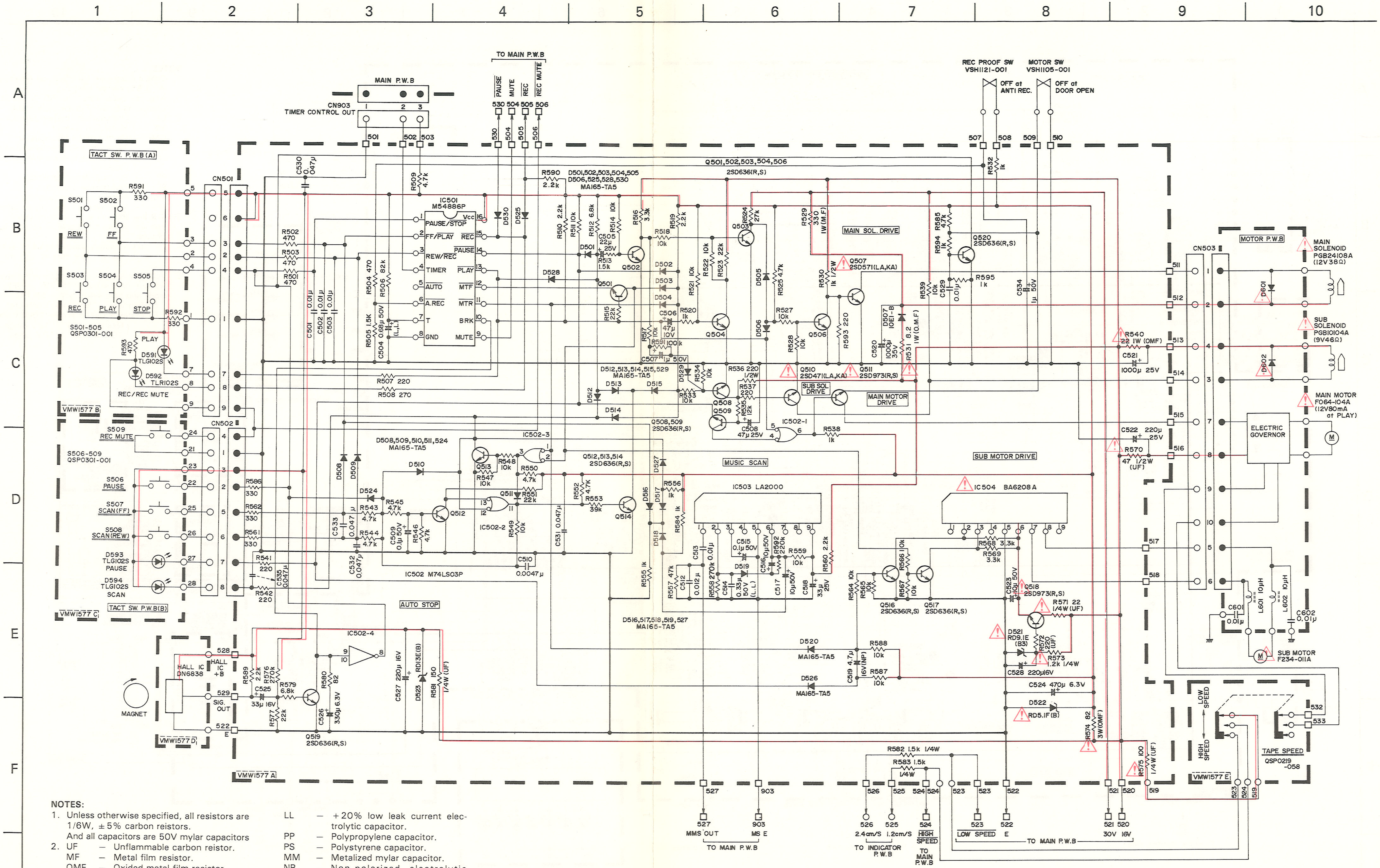
A
B
C
D
E
F
P.B HEAD AMP
ANRS/DOLBY B NR PROCESSOR
IC101 AN7362N
Q101,102 2SC1845(F,E)
Q103 2SC2001(L,K)
Q104,105 2SC1327(T,U) OR 2SC1571(H)
R/P HEAD CONNECTOR P.W.B
CN901
R/P HEAD VGH4421-001
VMW1576G
HEAD R/P SW
Q901 2SC1684(R,S) OR 2SC536(F,G)
Q902 2SC921(S,T,U)
VMW1576 F
INPUT LEVEL
VR103 20K (A)
VQZ901-001
MIC JACK ASS'Y
QMS6313-009
LINE IN
LINE OUT
PIN JACK ASS'Y
VMJ3004-002
PB SENS ADJ
VR101 20K (B)
PB EQ ADJ
VR102 20K (B)
REC/PB AMP
IC901 HA12036
L2 12μH
REC LEVEL
VR151 20K(B)
R145 27K
R245
RCH
TP101 ANRS LEVEL CHECK POINT
S901-1-1
S901-1-2
OUT IN
S901-1
ANRS / DOLBY B SW
Q903 2SC1684(R,S) OR 2SC536 (F,G)
Q904 2SA564 (R,S) OR 2SA608(F,G)
MUTING DRIVE
H.P AMP
IC902 UPC4557C
HEAD PHONE JACK
QMS6302-112
REC OFF PLAY
S902
TIMER SW
QSS1301-101
CN903
TO MECHA CONTROL P.W.B
SMS OUT
527
503
502
501
TO SPEED SW P.W.B
2.4cm/s
1.2cm/s
ANRS /DOLBY B
NORMAL
METAL
D921,922,924,925 GL-9PR10
D923 GL-9NG910
VMW1576 D
REC
505
REC MUTE
506
TO MECHA CONTROL P.W.B
D-M3 A/B/E
POWER TRANS VTP09C3-021B(BS)
POWER CORD
YEL (240V)
ORG (220V)
RED (120V)
WHITE
VOLTAGE SELECT SW QSS2325-203(BS)
POWER SW QSP0219-061
VMW4644
Q52 2SC1162(B,C)
VMW1576 B
F1,F2 T800mA
YEL(240V)
ORG (220V)
RED (120V)
BRN(100V)
POWER TRANS VTP09U3-021B
AC OUTLET QMC0235-003
D-M3 U
POWER SUPPLY
Q51 2SC1685(R,S) OR 2SC536(F,G)
D51,52,53,54 10E2-B
S51 POWER SW QSP0219-061 ON OFF
POWER TRANS VTP09A3-021B
RED
WHT
POWER CORD
AC 120V 60Hz
ORG
BRW
AC OUTLET QMC0235-003
D-M3 C/J
D907 MA165
E.HEAD CONNECTOR P.W.B
TP901 BIAS FREQUENCY CHECK POINT
CN902
E.HEAD VGH4212-503
VMW1576H
L1 OSC COIL VQH1009-024
Q905 2SC1684(R,S) OR 2SC536(G,H)
Q1,2 2SC1685(R,S) OR 2SC536(F,G)
BIAS O.S.C
BIAS CUT
BIAS ADJ
VR152 220K (B)
(NORMAL)
VR153 100K (B)
(METAL)
Q106 2SC2001(L,K)
Q107 2SC2001(L,K)
Q108,Q906 2SC1684(R,S) OR 2SC536(F,G)
S901-2 TAPE SELECT
METAL
NORMAL
VMW1576 A
PAUSE 530
HIGH SPEED 524
523 LOW SPEED
504 MUTE
530
TO MECHA CONTROL P.W.B
524
523
TO MECHA CONTROL P.W.B
504
TO MECHA CONTROL P.W.B
LID MODULE LT1069
-20 -10 -6 -3 0 +3 +6
CN904
903
522 E
521 +30V
520 +16V
E
CHASSIS EARTH
TO MECHA CONTROL P.W.B
D926 SLF305C
VMW4642

NOTES:
1. Unless otherwise specified, all resistors are 1/6 W, ±5% carbon resistors.
   And all capacitors are 50 V fixed ceramic capacitors or 50 V mylar capacitors.
2. UF — Unflammable carbon resistor
   MF — Metal film resistor
   OMF — Oxided metal film resistor
   Ta — Tantalum solid electrolytic capacitor
   LL — +20% low leak current electrolytic capacitor
   PP — Polypropylence capacitor
   PS — Polystyrene capacitor
   MM — Metallized mylar capacitor
   NP — Non-polarized electrolytic capacitor
3. Blue line shows the signal at playback.
   Red line shows the signal at recording, and +B circuits.
4. ⚠ part are safety assurance parts. When replacing those parts, make sure to use the specified one.
5. Voltage values are mesured by the following meter without input signal at NR SW = OFF, recording mode and tape select SW = METAL.
   E. Voltmeter = Electronic Voltmeter
   C. Tester = Circuit Tester (20kΩ/V impedance)
   (less than 10V — 10V range
   10V or more — 50V range)

Fig. 19

Standard Schematic Diagram of D-M3 (Mecha. Control Circuit)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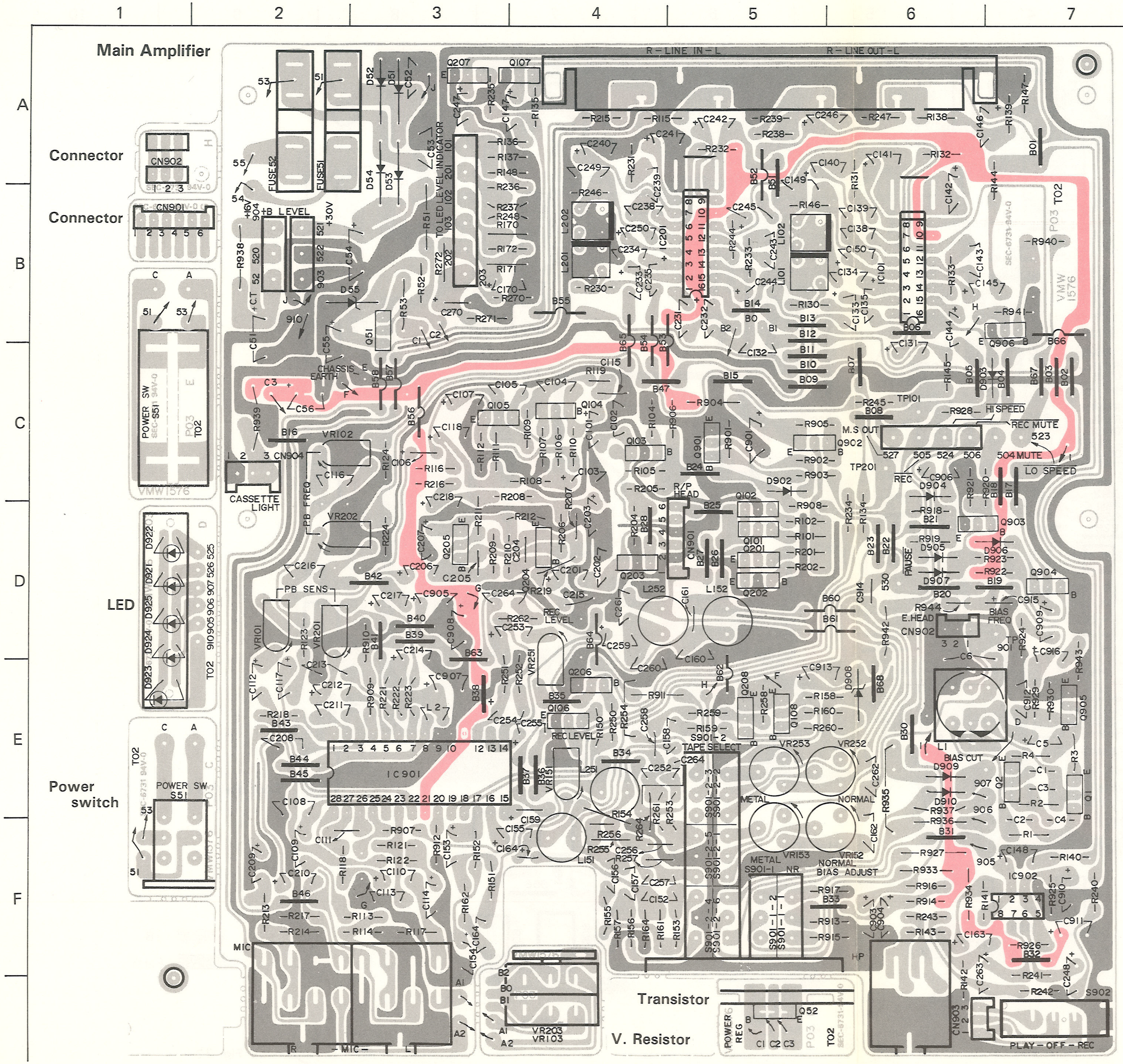
A
B
C
D
E
F
TO MAIN P.W.B
PAUSE
MUTE
REC
REC MUTE
MAIN P.W.B
CN903
TIMER CONTROL OUT
REC PROOF SW
VSH1121-001
OFF at ANTI REC.
MOTOR SW
VSH1105-001
OFF at DOOR OPEN
TACT SW. P.W.B (A)
S501
S502
REW
FF
S503
S504
S505
REC
PLAY
STOP
S501-505
QSP0301-001
R591 330
R592 330
R593 470
PLAY
D591 TLG102S
D592 TLR102S
REC/REC MUTE
VMW1577 B
CN501
S509 REC MUTE
S506-509
QSP0301-001
S506 PAUSE
S507 SCAN(FF)
S508 SCAN(REW)
D593 TLG102S PAUSE
D594 TLG102S SCAN
TACT SW. P.W.B(B)
VMW1577 C
CN502
IC501 M54886P
PAUSE/STOP
FF/PLAY
REW/REC
TIMER
AUTO
A.REC
T
GND
Vcc
REC
PAUSE
PLAY
MTF
MTR
BRK
MUTE
R590 2.2k
D501,502,503,504,505
D506,525,528,530
MA165-TA5
Q501,502,503,504,506
2SD636(R,S)
MAIN SOL. DRIVE
Q507 2SD571(LA,KA)
Q520 2SD636(R,S)
Q510 2SD471(LA,KA)
Q511 2SD973(R,S)
SUB SOL DRIVE
MAIN MOTOR DRIVE
D512,513,514,515,529
MA165-TA5
Q508,509 2SD636(R,S)
IC502-1
IC502-2
IC502-3
IC502-4
D508,509,510,511,524
MA165-TA5
Q512,513,514 2SD636(R,S)
MUSIC SCAN
IC503 LA2000
IC502 M74LS03P
AUTO STOP
D516,517,518,519,527
MA165-TA5
IC504 BA6208A
SUB MOTOR DRIVE
Q516 2SD636(R,S)
Q517 2SD636(R,S)
Q518 2SD973(R,S)
D521 RD9.1E (B3)
D522 RD5.1F(B)
D520 MA165-TA5
D526 MA165-TA5
HALL IC DN6838
HALL IC +B
SIG. OUT
MAGNET
VMW1577 D
Q519 2SD636(R,S)
D523 RD13E(B)
VMW1577 A
CN503
MOTOR P.W.B
MAIN SOLENOID PGB24108A (12V38Ω)
SUB SOLENOID PGB10104A (9V46Ω)
MAIN MOTOR F064-104A (12V80mA at PLAY)
ELECTRIC GOVERNOR
SUB MOTOR F234-011A
R540 22 1W (OMF)
C521 1000μ 25V
C522 220μ 25V
R570 47 1/2W (UF)
L601 10μH
L602 10μH
C601 0.01μ
C602 0.01μ
LOW SPEED
HIGH SPEED
TAPE SPEED QSP0219-058
VMW1577 E
R582 1.5k 1/4W
R583 1.5k 1/4W
527 MMS OUT
903 MS E
TO MAIN P.W.B
526 2.4cm/S
525 1.2cm/S
524 HIGH SPEED
TO INDICATOR P.W.B
TO MAIN P.W.B
523 LOW SPEED
522 E
521 30V
520 16V
TO MAIN P.W.B

NOTES:
1. Unless otherwise specified, all resistors are 1/6W, ±5% carbon reistors.
And all capacitors are 50V mylar capacitors
2. UF — Unflammable carbon reistor.
MF — Metal film resistor.
OMF — Oxided metal film resistor.
Ta — Tantalum solid electrolytic capacitor.
LL — +20% low leak current electrolytic capacitor.
PP — Polypropylene capacitor.
PS — Polystyrene capacitor.
MM — Metalized mylar capacitor.
NP — Non-polarized electrolytic capacitor.
3. —— +B circuit

Fig. 20

Main Amp. P.W. Board Parts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A
B
C
D
E
F
Main Amplifier
Connector
CN902
Connector
CN901
POWER SW S511
LED
D922
D921
D925
D924
D923
Power switch
POWER SW S51
R-LINE IN-L
R-LINE OUT-L
+B LEVEL
TO LED LEVEL INDICATOR
CHASSIS EARTH
CASSETTE LIGHT
PB FREQ
PB SENS
VR101
VR201
VR102
VR202
IC901
IC101
IC201
IC902
REC LEVEL
R/P HEAD
M.S OUT
TP201
TP101
HI SPEED
REC MUTE
MUTE
LO SPEED
PAUSE
E.HEAD
BIAS FREQ
TAPE SELECT
METAL
NORMAL
BIAS CUT
BIAS ADJUST
MIC
HP
PLAY - OFF - REC
S902
Transistor
V. Resistor
POWER REG
Q52
VR203
VR103
TO2
VMW1576

	E. Voltmeter			C. Tester		
	E	C	B	E	C	B
Q51	17.2	28.4	17.8	17.4	28.0	18
52	16.5	28.4	17.2	16.6	28.0	17.3
Q101	——	——	——	−23.8	0	−25.2
102	——	——	——	−23.8	0	−24.3
103	1.5	0	0.7	0	0	0.7
104	0.05	1.2	0.6	0.05	1.4	0.08
105	0.6	2.8	1.2	0.6	2.8	1.4
106	0	0	0	0	0	0
107	0	0	0	0	0	0
108	0	0	0	0	0	0
Q901	0	16.5	0	0	16.5	0.3
902	16.6	——	16.6	17.0	−24.0	16.6
903	0	16.5	0	0	16.5	0
904	16.3	0	16.6	16.5	0	16.6
905	0	0.1	0.7	0	0.1	0.7
Q1,2	0.4	14.6	0.4	0.4	15.0	0.4

	IC 101	
	E. Voltmeter	C. Tester
1	8.1	6.0
2	8.2	6.0
3	8.1	8.0
4	8.2	6.0
5	8.2	8.2
6	8.3	8.2
7	8.1	7.7
8	8.1	8.1
9	8.2	7.9
10	16.6	16.6
11	1.5	1.4
12	8.1	8.0
13	8.3	8.2
14	8.4	8.3
15	8.4	8.3
16	1.5	1.5
17	0	0

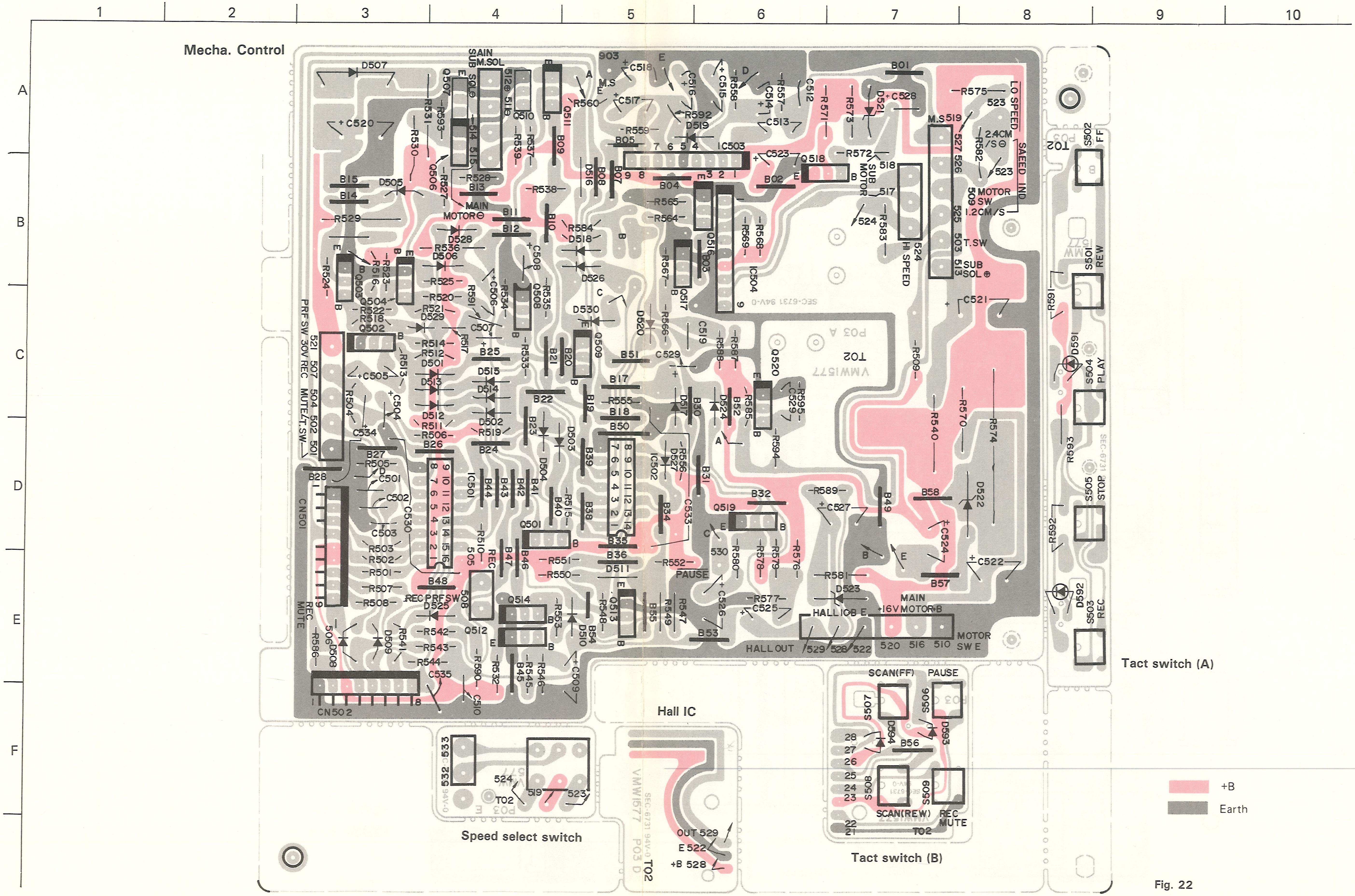
		IC 901	
		E. Voltmeter	C. Tester
1	(28)	8.6	8.5
2	(27)	8.4	8.3
3	(26)	8.3	7.1
4		3.2	3.3
5	(24)	7.7	5.0
6	(23)	7.7	5.4
7	(22)	6.0	6.0
8		8.4	8.0
9		0	0
10		0	0
11			
12	(17)	8.3	6.4
13	(16)	7.3	7.3
14	(15)	8.1	7.3
18		0	0
19		2.9	3.0
20		6.4	6.4
21		16.6	17.0
25		0.8	0.7

	IC 902	
	E. Voltmeter	C. Tester
1	8.1	8.1
2	8.1	8.1
3	8.1	7.0
4	0	0
5	8.1	7.0
6	8.1	8.0
7	8.1	8.1
8	16.3	16.5

🟥 +B
▨ Earth

Fig. 21

Mecha. Control P.W. Board Parts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A
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D
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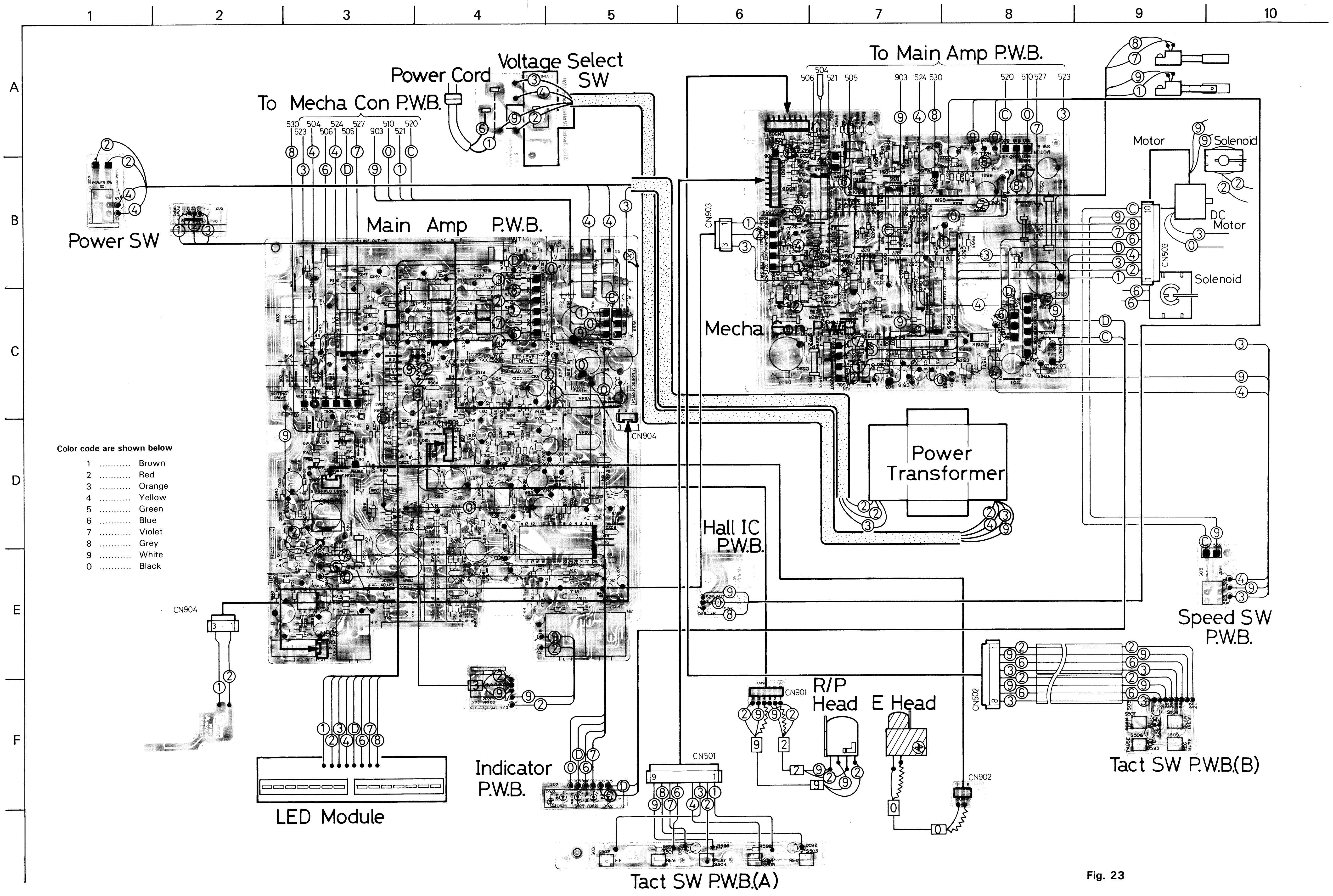
F
Mecha. Control
CN501
CN502
IC501
IC502
IC503
IC504
Speed select switch
Hall IC
Tact switch (A)
Tact switch (B)
SCAN(FF)
PAUSE
SCAN(REW)
REC MUTE
S501 REW
S502 FF
S503 REC
S504 PLAY
S505 STOP
🟥 +B
▨ Earth

Fig. 22

Wiring Connection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A
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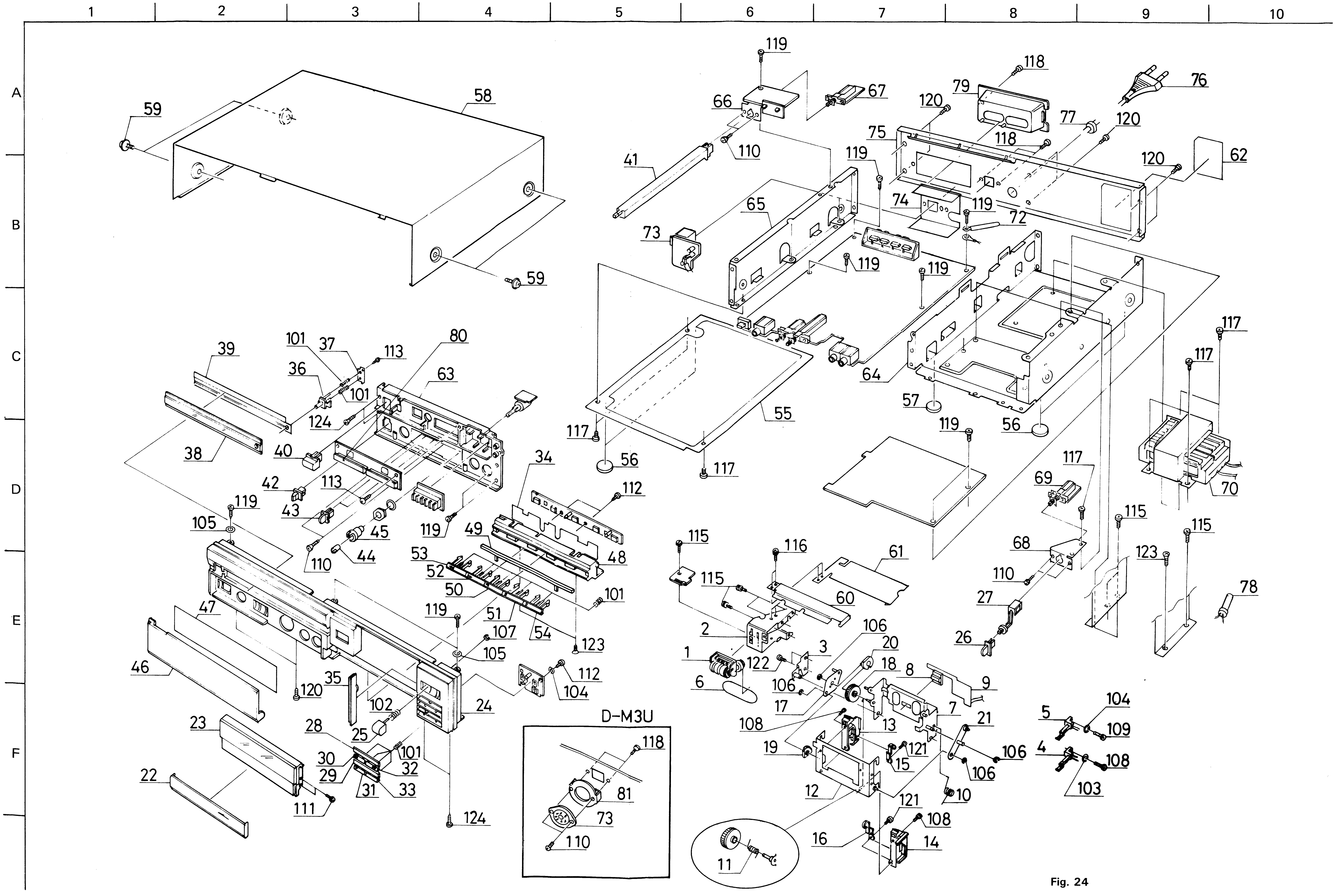
C
D
E
F
Power SW
Power Cord
Voltage Select SW
To Mecha Con P.W.B.
530 523 504 506 524 505 527 903 510 521 520
Main Amp P.W.B.
CN904
CN903
To Main Amp P.W.B.
506 504 521 505 903 524 530 520 510 527 523
Mecha Con P.W.B.
Motor
Solenoid
DC Motor
CN503
Power Transformer
Hall IC P.W.B.
Speed SW P.W.B.
CN502
Tact SW P.W.B.(B)
CN901
R/P Head
E Head
CN902
CN501
LED Module
Indicator P.W.B.
Tact SW P.W.B.(A)

Color code are shown below

1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Grey
9	White
0	Black

Fig. 23

Enclosure Assmebly and Electrical Parts (Except P.W. Board Parts)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119
118
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120
77
120
110
75
118
41
119
62
120
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72
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119
119
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101
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101
124
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101
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110
78
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119
51
106
107
54
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123
20
26
46
105
1
122
3
18
8
112
9
35
120
104
6
106
17
102
24
104
25
108
13
21
5
109
23
28
D-M3U
118
19
121
106
4
108
30
101
15
29
32
106
22
31
33
81
12
103
10
111
73
121
124
108
16
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Fig. 24

Enclosure Assembly and Electrical Parts List (Except P.W. Board Parts.)

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
1		VKC5154-001S	Counter		1
2		VKL5184-002C	Counter Bracket		1
3		VKL5183-00A	Bracket Ass'y		1
4		VSH1121-001	Switch Ass'y		1
5		VSH1105-001	Switch Ass'y		1
6		VKB3000-051	Belt		1
7		VKL5192-00B	Holder Plate Ass'y		1
8		SLF305C	L.E.D.		1
9		VMW4642-001	P.W.B.		1
10		VKW4349-002	Holder Spring		1
11		VKW4362-001	″		1
12		VKL5190-00B	Holder Bracket Ass'y		1
13		VJD4564-001	Tape Holder (L)		1
14		VJD4565-001	″ (R)		1
15		VKS4466-003	Cassette Spring		1
16		VKS4466-004	″		1
17		VKL5188-00A	Cross Bar Ass'y		1
18		VKS4458-002	Gear (1)		1
19		VKS4459-001	Gear (2)		1
20		VKS4460-001	Roller		1
21		VKL5288-00A	Cross Bar Ass'y		1
22		VJD4563-002	Lid Plate		1
23		VJT4060-00A	Cassette Lid Ass'y		1
24		VJC1217-003	Front Panel	D-M3A/B/C/E/U	1
		″ -002UL	″	D-M3J	1
(24,28,29, 35,38,39)		ZCDM3Y-CBF	Front Panel Ass'y		1
25		VXP4227-00A	Push Button Ass'y		1
26		VXP4226-001	Push Button	for speed SW	1
27		VKS4461-001	Remote Bar		1
28		VJK4167-003	Finder (3)		1
29		VJK4167-004	Finder		1
30		VXP4225-001	Push Button	Music Scan	1
31		VXP4225-002	″	Pause	1
32		VXP4225-003	″	Music Scan	1
33		VXP4225-004	″	Rec Mute	1
34		VMA4154-001	Conductive Sheet		1
35		VJD4566-001	Fitting		1
36		VXP4228-001	Push Knob		1
37		VKL5193-001	Bracket		1
38		VJK4165-001	Finder (1)		1
39		VJD4567-001	Meter Plate		1
40		VXP4160-001	Power Knob		1
41		E67192-001	Push Shaft		1
42		VXS4058-001	Slide Knob		1
43		VXP4206-001	Push Button		2
44		VXL4162-001	Knob (L)		1
45		VXL4163-001	″ (R)		1
46		VJD3331-003	Door	D-M3A/B/C/E/U	1
		″ -002UL	″	D-M3J	1
47		VJD4571-001	Door Plate		1
48		VJD2187-001	Button Case		1
49		VJK4166-002	Finder (2)		1
50		VXP4222-001	Push Button	Play	1
51		VXP4223-001	″	Stop	1
52		VXP4223-002	″	Rew	1
53		VXP4224-001	″	FF	1
54		VXP4224-002	″	Rec	1
55		VKL2159-001	Bottom Cover		1
56		VJF4003-004	Foot		4
57		VJF338415-01	″		1
58		VJC1218-004	Top Cover		1
59		VKZ3001-002	Screw	for Side	4
60		VKL5227-001	Bracket		1
61		VMA4152-001	Shield Plate		1
62		VYN2097-002PA	Name Plate	D-M3A	1
		″ -003PA	″	D-M3B	1
		″ -004PA	″	D-M3C	1
		″ -005PA	″	D-M3E	1
		″ -006PA	″	D-M3J	1
		″ -007PA	″	D-M3U	1
63		VJC2069-001	Front Chassis		1
64		VKL1216-002	Chassis		1
65		VKL2146-002	Side Bracket		1
66		VKL5069-001	Power Switch Bracket		1
67	⚠	QSP0219-061	Push Switch	for power SW	1
68		VKL5196-001	Speed Switch Bracket		1
69		QSP0219-058	Push Switch		1
70	⚠	VTP09C3-021BBS	Power Transformer	D-M3B	1
	⚠	″ -021B	″	D-M3A/E	1
	⚠	VTP09A3-021B	″	D-M3C/J	1
	⚠	VTP09U3-021B	″	D-M3U	1
72		VKZ4001-011	Wire Holder		1
73	⚠	QSS2325-203BS	Voltage Select Switch	D-M3B	1
	⚠	QSS2325-203	Voltage Select Switch	D-M3E	1
	⚠	QMC0235-003	AC Outlet	D-M3C/J	1
	⚠	″ -001	″	D-M3U	1
74	⚠	VMA4151-001	Insulator		1
75	⚠	VJC2057-005	Rear Panel	D-M3A/B/E/U	1
		″ -006	″	D-M3C/J	1
76	⚠	QMP9017-008BS	Power Cord	D-M3B	1
	⚠	QMP1200-200	″	D-M3C/J	1
	⚠	QMP3900-200	″	D-M3E	1
	⚠	QMP2560-200	″	D-M3A	1
	⚠	QMP7600-200	″	D-M3U	1
77	⚠	QHS3876-162BS	Strain Relief	D-M3B	1
	⚠	QHS3876-162	″	D-M3A/C/E/J/U	1
78	⚠	TAW000504-01	Connector		2
79		VJD3299-001	Jack Escutcheon		1
80		LT-1069	LED Module		1
81		VKL4275-001	Bracket	D-M3U for Voltage Select Switch	1
101		VKW3001-053	Compression Spring	Push Button	6
102		″ -076	″	Push Button	1
103		WSS2000Z	Washer	Switch Ass'y	1
104		WSS2600Z	″	Switch Ass'y	1
105		WNS3000Z	″	Push Button	2
106		REE2000	E. Ring	Cross Bar Ass'y	4
107		REE2500	″	Push Button Ass'y	1
108		LPSP2006Z	Screw	Switch Ass'y x 1 Cassette Holder x 2	3
109		LPSP2606Z	″	Switch Ass'y	1
110		LPSP3006Z	″	Sw. ~ Sw. Bracket x 4 P.W.B. x 2	6
111		LDSP2005R	″	Cassette Lid Ass'y	2
112		SBSF2606Z	″	Button Case	2
113		SBSF2608Z	″	Bracket x 2 LED Module x 1	3
114		SDST2004Z	″		1
115		SDST2604Z	″	Counter Bracket x 3 P.W.B. x 1 Chassis ~ Mecha. x 3	7
116		SDSP2606Z	″	Bracket	2
117		SDST3006Z	″	Chassis ~ Sw. Bracket x 1 Power Transformer x 4 Mecha. Con. P.W.B. x 2 Bottom Cover x 3	10
118		SDST3006R	″	Voltage Select Switch	2
119		SDST3008Z	″	Front Panel x 2 Side Bracket ~ Sw. Bracket x 2 Front Chassis x 2 P.W.B. x 2	8
120		SDST3008R	″	Front Panel ~ Front Chassis x 3 Rear Panel x 5	8
121		SPSP2003Z	″	Cassette Holder	2
122		SSSP2605Z	″	Bracket Ass'y	2
123		SSSP2606Z	″	Chassis ~ Mecha.	5
124		SSSP3006Z	″	Front Chassis	2
125		SDST2064Z	″	Chassis ~ Mecha.	1

Mechanical Component Parts

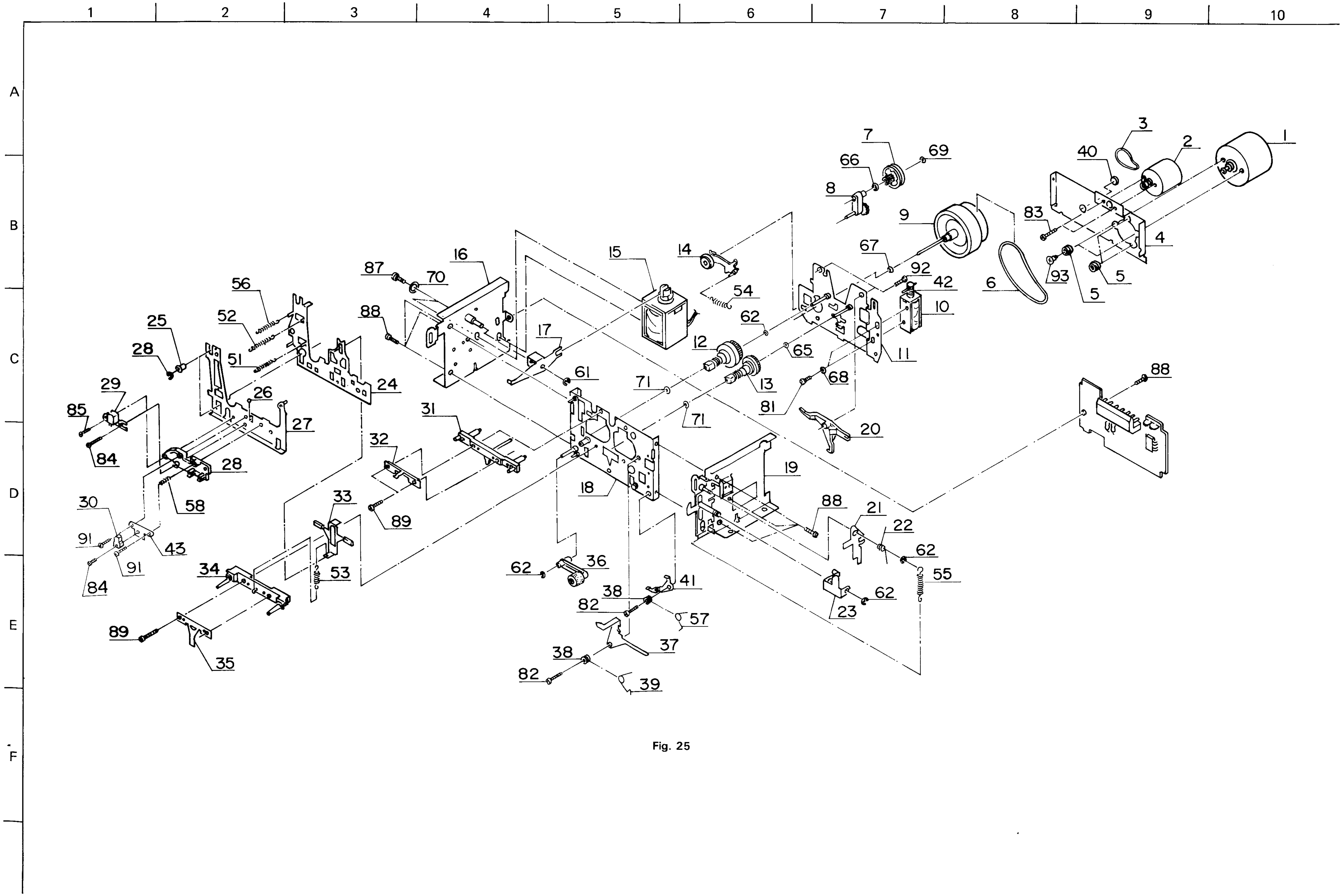
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Fig. 25

Mechanical Component Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	F064-104A	Capstan Motor Ass'y		1
2	F234-011A	Reel Motor Ass'y		1
3	FF13E-00A	Idler Belt		1
4	FC21L-00A	Motor Bracket		1
5	FJ147-12A	Motor Cushion		4
6	FF13D-00A	Capstan Belt		1
7	FN13T-00A	FF/REW Gear		1
8	FR14L-00A	Idler Gear Ass'y		1
9	FR15W-00A	Flywheel Ass'y		1
10	PGB10104A	Sub Solenoid		1
11	F127-023A	Sub Chassis Ass'y		1
12	FR14F-00A	Take Up Reel Ass'y		1
13	FR14G-00A	Supply Reel Ass'y		1
14	FR14K-12A	Idler Arm Ass'y		1
15	PGB24108A	Main Solenoid		1
16	F115-025A	Side Bracket Ass'y	Left	1
17	FC21E-00A	Play Lever		1
18	F112-047A	Chassis Base Ass'y		1
19	F115-024A	Side Bracket Ass'y	Right	1
20	FD16R-12A	Brake Lever		1
21	FC25K-00A	Lock Arm		1
22	FK16U-00A	Lock Arm Spring		1
23	FC25H-00A	Release Lever		1
24	FC21A-16A	Slide Base		1
25	FL21M-00A	Head Base Collar	Head Base	2
26	MM113-11A	Steel Ball	Head Base	1
27	F012-071A	Head Base Ass'y		1
28	FD16N-12A	Head Block		1
29	FU11R-00A	R/P Head		1
30	FU12C-00A	E. Head		1
31	F240-011A	Cassette Guide(R)		1
32	FC21C-00A	Cassette Spring		1
33	F027-028A	Brake Ass'y		1
34	FD16L-00A	Cassette Guide(F)		1
35	FC21B-00A	Head Base Spring		1
36	F014-066A	Pinch Roller Ass'y		1
37	FC25L-13A	Rec. Lever		1
38	FQ11M-00A	Collar		2
39	FK16V-00A	Rec. Lever Spring		1
40	FM177-13A	Thrust Screw		1
41	FC27H-00A	Eject Safety		1
42	FK17E-13A	Solenoid Spring	Sub Solenoid	1
43	FC12F-00A	E Head base		1
51	FK13T-00A	〃	Pinch Roller ~ Slide Base	1
52	FK13W-00A	〃	Head Base ~ Slide Base	1
53	FK13Y-00A	〃	Brake	1
54	FK14A-00A	〃	Take Up Idler	1
55	FK16W-00A	〃	Lock Bar	1
56	FK17F-14A	〃	Slide Base ~ Chassis	1
57	FK17P-00A	〃	Safety	1
58	FK342-00A	〃	E. Head	1
61	REE1500	E ring	Head Base x 2 Pinch Roller x 1	3
62	REE2000	〃	Release Lever etc.	3
65	FJ111-15A	Washer	Reel Disk	2
66	〃 -17A	〃	Gear	1
67	〃 -18A	〃	Flywheel	1
68	WLS2600	〃	Sub Solenoid	1
69	UJ11N-11A	〃	Idler Gear	1
70	MJ112-13A	〃	Solenoid	1
71	UJ11N-12A	〃	Reel Disk	2
81	FG143-17A	Screw	Sub Solenoid	2

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
82	KG194-35A	Washer	Safety Rec. Lever	2
83	FG164-12A	〃	Reel Motor	2
84	UG12B-13A	Screw	R/P Head, E Head	2
85	FG164-22	〃	R/P Head	1
87	FG114-17A	〃	Main Solenoid	2
88	KG194-25A	〃	Sub Bracket	7
89	KG-194-36A	〃	Cassette Guide	4
91	FG164-28A	〃	E. Head	2
92	UG11U-11A	〃	Sub Chassis	2
93	UG11F-12A	Collar Screw	Capstan Motor	2

Main Amplifier P.W. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
		VMW1576-003	P.W. B.	No supply as parts ass'y	1
R101,201,105,205,147,247,148,248,150,250		QRD161J-682	C. Resistor	6.8 kΩ 1/6 W	10
R102,202,130,230,906,918,919		〃 -222	〃	2.2 kΩ 〃	7
R104,204,116,216,146,246,909,917		〃 -392	〃	3.9 kΩ 〃	8
R106,206,117,217,139,239,158,258,164,264,172,272,916,941		〃 -104	〃	100 kΩ 〃	14
R207		QRD143J-181S	〃	180 Ω 1/4 W	1
R107		QRD161J-181	〃	〃 1/6 W	1
R108,208,171,271,137,237		〃 -183	〃	18 kΩ 〃	6
R109,209,170,270		〃 -153	〃	15 kΩ 〃	4
R110,210		〃 -224	〃	220 kΩ 〃	2
R111,211,114,214,901,902,903,921,922,923		〃 -103	〃	10 kΩ 〃	10
R112,212		〃 -821	〃	820 Ω 〃	2
R113,213		〃 -471	〃	470 Ω 〃	2
R115,215,151,251		〃 -393	〃	39 kΩ 〃	4
R118,218,915		〃 -561	〃	560 Ω 〃	3
R119,219,120,220,944		QRD143J-151S	〃	150 Ω 1/4 W	5
R121,221,141,241		QRD161J-823	〃	82 kΩ 1/6 W	4
R122,222,910,940		〃 -562	〃	5.6 kΩ 〃	4
R123,223,135,235,929,930		〃 -472	〃	4.7 kΩ 〃	6
R124,224,152,252,920		〃 -223	〃	22 kΩ 〃	5
R131,231		〃 -680	〃	68 Ω 〃	2
R132,232		QRD143J-155S	〃	1.5 MΩ 1/4 W	2
R133,233		QRD161J-182	〃	1.8 kΩ 1/6 W	2

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
R134,234,905 138,238,144 244,161,261		QRD161J-332	C. Resistor	3.3 kΩ 1/6 W	9
R136,236,140 240,145,245		〃 -273	〃	27 kΩ 〃	6
R142,242,160 260,907		〃 -102	〃	1 kΩ 〃	5
R143,243		〃 -151	〃	150 Ω 〃	2
R153,253,913		〃 -123	〃	12 kΩ 〃	3
R154,254		QRD147J-222S	〃	2.2 kΩ 1/4 W	2
R155,255,159 259		QRD161J-101	〃	100 Ω 〃	4
R256		QRD143J-271S	〃	270 Ω 〃	1
R156,928		QRD161J-271	〃	〃 1/6 W	2
R257		QRD143J-104S	〃	100 kΩ 1/4 W	1
R1,2,912,925 926		QRD161J-683	〃	68 kΩ 1/6 W	5
R3,4		〃 -220	〃	22 Ω 〃	2
R52,908		QRD161J-822	C. Resistor	8.2 kΩ 1/6 W	2
R53,933	⚠	QRD149J-330S	C. Resistor (UF)	33 Ω 1/4 W	2
R904	⚠	〃 -331S	〃	33 Ω 〃	1
R908,914		QRD161J-822	C. Resistor	8.2 kΩ 1/6 W	2
R911		QRD147J-332S	〃	3.3 kΩ 1/4 W	1
R927		QRD121J-122	〃	1.2 kΩ 1/2 W	1
R934	⚠	QRD149J-101S	C. Resistor (UF)	100 Ω 1/4 W	1
R935		QRD129J-181	〃	180 Ω 1/2 W	1
R936,937		QRD147J-182S	C. Resistor	1.8 kΩ 1/4 W	2
R938	⚠	QRD129J-470	C. Resistor (UF)	47 Ω 1/2 W	1
R939		QRD121J-122	C. Resistor	1.2 kΩ 〃	1
R942		QRD147J-392S	〃	3.9 kΩ 1/4W	1
R943		QRD161J-221	〃	220 Ω 1/6W	1
C101,201,112 212,141,241		QEB41EM-475	E. Capacitor (Low Leak)	4.7 μF 25 V	6
C102,202		QFM41HJ-122	M. Capacitor	0.0012 μF 50 V	2
C103,203,118 218,142,242 263		QET41ER-476	E. Capacitor	47 μF 25 V	7
C104,204,111 211		QCS11HJ-101	C. Capacitor	100 pF 50 V	4
C105,205		QCS11HJ-680	〃	68 pF 〃	2
C106,206		QEB41HM-105	E. Capacitor (Low Leak)	1 μF 〃	2
C107,207		QET41JR-227N	E. Capacitor	220 μF 63 V	2
C108,208		QCS11HJ-560	C. Capacitor	56 pF 50 V	2
C109,209,117 217		QEB41EM-335	E. Capacitor (Low Leak)	3.3 μF 25 V	4
C110,210,131 231,133,233 146,246,148 248,153,253 159,259		QET41HR-105	E. Capacitor	1 μF 50 V	14
C113,213		QFM41HJ-473	M. Capacitor	0.047 μF 〃	2
C114,214,910 913		QET41ER-336	E. Capacitor	33 μF 25 V	4
C115,215		QFM41HJ-563	M. Capacitor	0.056 μF 50 V	2
C116,216		〃 -122	〃	0.0012 μF 〃	2
C132,232		QCS11HJ-121	C. Capacitor	120 pF 〃	2
C52,53	⚠	QCF11HP-103	〃	0.01 μF 〃	2
C134,234,912		QCF11HP-103	〃	0.01 μF 〃	3

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
C135,235,150 151,251,250		QET41HR-475	E. Capacitor	4.7 μF 〃	6
C138,238		QFM41HJ-222	M. Capacitor	0.0022 μF 〃	2
C139,239		QFM41HJ-273	M. Capacitor	0.027 μF 50V	2
C140,240		QEB41HM-334	E. Capacitor (Low Leak)	0.33 μF 〃	2
C2,3,143,243 149,249		QFM41HJ-332	M. Capacitor	0.0033 μF 〃	6
C5,144,244 145,245		QET41HR-335	E. Capacitor	3.3 μF 〃	5
C147,247		QET41HR-104N	〃	0.1 μF 〃	2
C152,251		QFM41HJ-152	M. Capacitor	0.0015 μF 〃	2
C154,254		QET41HR-154N	E. Capacitor	0.15 μF 〃	2
C155,255,916		QET41ER-226	〃	22 μF 25V	3
C156,256,157 257		QFM41HJ-183	M. Capacitor	0.018 μF 50V	4
C158,258		QFM41HJ-683	〃	0.068 μF 〃	2
C160,260		QCS11HJ-391	C. Capacitor	390pF 〃	2
C161,261		QCS11HJ-201	〃	200pF 25V	2
C163		QET41ER-476N	E. Capacitor	47 μF 〃	1
C164,264		QCS41HJ-471	C. Capacitor	470pF 50V	2
C170,270		QET41HR-475	E. Capacitor	4.7 μF 〃	2
C171,271		QET41HR-335N	〃	3.3 μF 〃	2
C162,262		QCY12HK-101	C. Capacitor	100pF 〃	2
C1		QFP82AJ-682	P.P. Capacitor	0.0068 μF 100V	1
C4		QFM41HJ-103	M. Capacitor	0.01 μF 50V	1
C6		QFP82XJ-332	P.P. Capacitor	0.0033 μF	1
C51		QET41ER-108N	E. Capacitor	1000 μF 25V	1
C54	⚠	QET41VR-108N	〃	〃 35V	1
C55		QET41ER-107N	〃	100 μF 25V	1
C56	⚠	QET41ER-337N	〃	330 μF 〃	1
C57,58,914		QCF11HP-103	C. Capacitor	0.01 μF 50V	3
C901,908,909 911		QET41ER-227N	E. Capacitor	220 μF 25V	4
C903,904,906		QET41HR-106	〃	10 μF 50V	3
C905		QET41AR-476	〃	47 μF 10V	1
C907		QET41CR-227N	〃	220 μF 16V	1
C915		QET41HR-474N	〃	0.47 μF 50V	1
VR101,201		QVP8A0B-024	V. Resistor	0.02 μF P.B Sens Adj.	2
VR102,202		〃	〃	〃 P.B EQ Adj.	2
VR151,251		〃	〃	〃 REC Level	2
VR152,252		QVP4A0B-104	〃	0.1 μF Norm Bias Adj.	2
VR153,253		〃	〃	〃 Metal Bias Adj.	2
L101,201		VQZ0009-002	Filter	81 kHz	2
L102,202		VQZ0004-002	〃	19 kHz	2
L151,251		VQP0001-682	Inductor		2
L152,252		VQP0001-183	〃		2
L1		VQH1009-024	O.S.C. Coil		1
		VYH4514-002	Shield Case	for L1	1
L2		VQZ0015-120	Inductor	12 μH	1
		QMS6313-009	MIC Jack Ass'y		1
		QMS6302-112	H.P Jack Ass'y		1
		VMJ3004-102	PIN Jack Ass'y		1
S151		QST4231-V01	Push SW Ass'y		1
S902		QSS1301-101	Slide SW	Timer	1
D902,903,904 905,906,907		MA165-TA5	Si. Diode		6
D908		RD5.6E(B)	Zener Diode		1
D909,910		MA165-TA5	Si. Diode		2
D51,52,53,54	⚠	10E2-B	Si. Diode		4
D55	⚠	RD18E(B3)	Zener Diode		1

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
Q101,102,102 202		2SC1845(F.E)	Si. Transistor		4
Q103,203,106 206,107,207		2SC2001(L.K)	″		6
Q105,205,104 204		2SC1327(T.U)	″	or 2SC1571(H)	4
Q108,208,901 903,906		2SC1684(R.S)	″	or 2SC536(F.G)	5
Q1,2,905		2SC1685(R.S)	″	or 2SC536(F.G)	3
Q51	⚠	2SC1685(R,S)	″	or 2SC536(F,G)	1
Q902		2SA921(S.T.U)	″		1
Q904		2SA564(R.S)	″	or 2SA608(F.G)	1
IC101,201		AN7362N	IC.	ANRS	2
IC901		HA12036	″	R/P Amp.	1
IC902		UPC4557C	″	H.P Amp.	1
CN903,904		QMV5005-003	Connector		2
CN901		PU49218-06	″		1
CN902		PU49218-03	″		1

Mecha. Control P.W. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
		VMW1577- A	P.W.B.	No supply as parts ass'y	1
R501 ~ 504		QRD161J-471	C. Resistor	470 Ω 1/6 W	4
R505,513		″ -152	″	1.5 kΩ ″	2
R506		″ -823	″	82 kΩ ″	1
R507,537,541 542		″ -221	″	220 Ω ″	4
R508		″ -271	″	270 Ω ″	1
R509,525,543 544,545,546 550,552,585		″ -472	″	4.7 kΩ ″	9
R510,519,526 560,589,590		″ -222	″	2.2 kΩ ″	6
R511,518,521 522,527,528 533,534,539 547,548,549 559		″ -103	″	10 kΩ ″	13
R512,579		″ -682	″	6.8 kΩ ″	2
R515,523,551 577,578		″ -223	″	22 kΩ ″	5
R516,568,569		″ -332	″	3.3 kΩ ″	3
R517		QRD143J-103	″	10 kΩ 1/4 W	1
R520,532,538 555,556,584 594		QRD161J-102	″	1 kΩ 1/6 W	7
R524		″ -273	″	27 kΩ ″	1
R529	⚠	QRG019J-331	O.M.F. Resistor	330 Ω 1 W	1
R530		QRD121J-102	C. Resistor	1 kΩ 1/2 W	1
R531	⚠	QRX019J-8RZ	M.F. Resistor	8.2 Ω 1 W	1
R535		QRD161J-123	C. Resistor	12 kΩ 1/6 W	1
R536		QRD121J-821	″	820 Ω 1/2 W	1
R540	⚠	QRG019J-220	O.M.F. Resistor	22 Ω 1 W	1
R553		QRD161J-393	C. Resistor	39 kΩ 1/6 W	1
R577		″ -473	″	47 Ω ″	1
R558,576		″ -274	″	270 kΩ ″	2
R561,562		QRD143J-331S	″	330 Ω 1/4 W	2
R570	⚠	QRD129J-470	C. Resistor (U.F.)	47 Ω 1/2 W	1

Ref. No.	⚠	Parts No.	Parts Name	Remarks		Q'ty
R571	⚠	QRD149J-220	〃	22 Ω	1/4 W	1
R572	⚠	〃 -221S	〃	220 Ω	〃	1
R573		QRD147J-122S	C. Resistor	1.2 kΩ	〃	1
R574	⚠	QRG039J-820	O.M.F. Resistor	82 Ω	3 W	1
R575	⚠	QRD149J-101S	C. Resistor (U.F.)	100 Ω	1/4 W	1
R580		QRD161J-820	C. Resistor	82 Ω	1/6 W	1
R581		QRD149J-151S	C. Resistor (U.F.)	150 Ω	1/4 W	1
R582,583		QRD147J-152S	〃	1.5 kΩ	〃	2
R586		QRD161J-331	C. Resistor	330 Ω	1/6 w	1
R591		QRD143J-104S	〃	100 kΩ	1/4 W	1
R592		〃 -224S	〃	220 kΩ	〃	1
R593		〃 -221S	〃	220 Ω	〃	1
R595		〃 -102S	〃	1 kΩ	〃	1
C501,502,503 529		QCF11HP-103	C. Capacitor	0.01 μF	50 V	4
C504		QET41H-684	E. Capacitor	0.68 μF	50 V	1
C505		QET41ER-226	〃	22 μF	25 V	1
C506		QET41AR-476	〃	47 μF	10 V	1
C507		QET41HR-105	〃	1 μF	50 V	1
C508		QET41ER-476	〃	47 μF	25 V	1
C509,515		QET41HR-104	〃	0.1 μF	50 V	2
C510		QCF11HP-472	C. Capacitor	0.0047 μF	50 V	1
C512		QFM41HJ-123	M. Capacitor	0.012 μF	〃	1
C513		OFM41HJ-103	〃	0.01 μF	〃	1
C514		QEB41HM-334	E. Capacitor (Low Leak)	3.3 μF	〃	1
C516,517,523		QET41HR-106	E. Capaitor	10 μF	50 V	3
C518,525		QET41ER-336	E. Capacitor	33 μF	25 V	2
C519		QEN41CA-475	E. Capacitor (N.P.)	4.7 μF	16 V	1
C520,521		QET41VR-108	E. Capacitor	1000 μF	35 V	2
C522		QET41ER-227N	E. Capacitor	220 μF	25 V	1
C524		QET41JR-477N	〃	470 μF	63 V	1
C526		QET41JR-377N	〃	370 μF	63 V	1
C527,528		QET41CR-277N	〃	270 μF	16 V	2
C530,531,532 533		QCF11HP-473	C. Capacitor	0.047 μF	50 V	4
D501～506,508 509～520, 524～528,530		MA165-TA5	Si. Diode			35
D529		MA165	〃			1
D507		10E1-B	〃			1
D521	⚠	RD9.1E (B3)	Zener Diode			1
D522	⚠	RD5.1F (B)	〃			1
D523		RD13E (B)	〃			1
Q501～506,508 509,512～514 516,517,519 520		2SD636 (R.S.)	Si. Transistor			15
Q507	⚠	2SD571 (LA.KA)	〃			1
Q510	⚠	2SD471 (LA.KA)	〃			1
Q511,518	⚠	2SD973 (R.S.)				2
IC501		M54886P	IC			1
IC502		M74LS03P	〃			1
IC503		LA2000	〃			1
IC504	⚠	BA6208A	〃			1
CN501		QMV5004-009	Connector (Plug)			1
CN502		QMV5004-008	Connector			1

Other P.W. Board Parts List

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Ref. No.	⚠	Parts No.	Parts Name	Remarks	Q'ty
(Transistor)					
		VMW1576-**B	P.W.B.		1
Q52	⚠	2SC1162(B.C)	Si. Transistor		1
		VKL5168-001	Heat Sink		1
		DPSP3008Z	Screw	Q52 + Heat Sink	1
(Connector)					
		VMW1576-**G	P.W.B.		1
CN901		PU51945-06	Connector	6p (R/P Head)	1
(Connnector)					
		VMW1576-**H	P.W.B.		1
CN902		PU51945-03	Connector	3p (E Head)	1
(L.E.D.)					
		VMW1576-**D	P.W.B.		1
D921,922		GL-9PR2	L.E.D.		4
924,925					
D923		GL-9NG92	″		1
		VKS4369-001	L.E.D. Holder		1
(V. Resistor)					
		VMW1576-**F	P.W.B.		1
VR103,203		QVZ1901-001	V. Resistor		2
		TAZ336499-04	Volume Lug		1
(Tact SW) (A)					
		VMW1577-**B	P.W.B.		1
S501～505		QSP0301-001	Tact SW		5
D591,592		TLG102S	L.E.D.		2
R591,592		QRD161J-331	C. Resistor	330Ω 1/6 W	2
R593		″ -471	″	470Ω ″	1
(Tact SW) (B)					
		VMW1577-**C	P.W.B.		1
S506～508		QSP0301-001	Tact SW		4
593,594		TLG102S	L.E.D.		2
		UKS4167-001	Spacer	for D593,594	1
(Hall IC)					
		VMW1577-**D	P.W.B.		1
		DN6838A	Hall IC		1
(L.E.D.)					
		VMW4642-001	P.W.B.		1
		SLF305C	L.E.D.		1
(L.E.D. Module)					
		LT-1069	L.E.D. Module		1
R180,280		QRD143J-472S	C. Resistor	4.7 kΩ 1/4 W	2
C180,280		QET41HR-105N	E. Capacitor	1μF 50 V	2
C990		QET41ER-336N	″	33μ 25 V	1
(Power Swtich)					
		VMW1576-**C	P.W.B.		1
		QSP0219-061	Push Switch		1
(Voltage Select Switch)		VMW4644-002	P.W.B.		1
		QSS2325-203BS	Voltage Select SW.	D-M3B	1
		QSS2325-203	″	D-M3A/E	1
		VMA4151-001	Insulator		1

Packing

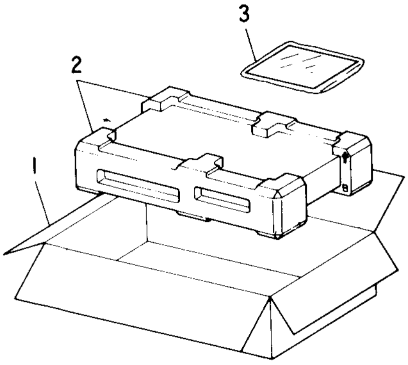

Fig. 26

Packing Material Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1.	VPD2097-J02	Carton	D-M3B	1
	〃 -J03	〃	D-M3A	1
	〃 -J04	〃	D-M3C	1
	〃 -J05	〃	D-M3E	1
	〃 -J06	〃	D-M3J	1
	〃 -J07	〃	D-M3U	1
2.	VPH2163-001	Cushion (F)	Front	1
	VPH2164-001	〃 (B)	Back	1
3.	VPE4002-004	Poly Bag	D-M3B	1
	AP4056B-077	Envelope	D-M3A/C/E/J/U for Inst. Book	1
	Q0414H	Wire Clamp	for power cord	1
	TKS000501-02	Sheet	for unit	1
	VPE4002-007	Poly Bag	for unit, D-M3B	1
	QPGA050-05005	〃	for Unit, D-M3A/C/E/J/U	1
	AP4056A-36	Envelope	for pin cord	1

Accessories

⚠ parts are safety assurance parts.
When replacing those parts, make sure to use the specified one.

Parts No.	⚠	Parts Name	Remarks	Q'ty
VGW1212-J02		Cassette Tape	DT205	1
VMP0002-00C		Pin Cord		1
VNN0098-901		Instruction Book	D-M3A/C/J/U	1
〃 -301		〃	D-M3B/E	1
BT20029B		Warranty Card	P-M3A	1
BT20025E		〃	D-M3C	1
BT20047		〃	D-M3J/U	1
BT20057		〃	D-M3E	1
BT20013C		Guarantee Cirtificate	D-M3B	1
TJL000443-01		Seal	D-M3B	1
BT20046A		Special Reply Card	D-M3J/U	1
		BEAB Label	D-M3B	1
QZL1002-003		Warning Lavel	D-M3B	1
TLT052401-01		Warning Label	D-M3B/A/E	1
VNC5004-001		Mark Sticker	D-M3B/E	1
VND4006-002		Caution Label	D-M3A/B/C/E/U	1
T44362-001		CSA Marker	D-M3C	1
TLT000505-01		UL/CSA Caution Label	D-M3C/J	1
VND4037-001		ƒ Mark Label		1
BT20044B		Safety Instruction	D-M3J	1
BT20046A		Special Reply Card	D-M3U for PX. EES	1
E7795-1		EP Mark	D-M3U	1
V04062-001	⚠	Siemens Plug	D-M3U	1
T46328-001		Caution Label	D-M3U	1
VNG5311-101		Caution Card	for ESS D-M3U	1
VND4006-002		Caution Label	D-M3U	1

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